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ORIGINAL LECTURES.

PSORIASIS.

A Clinical Lecture.

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GENTLEMEN: In the case of the patient before us to-day, we have a disease wherein the diagnosis is usually a comparatively simple matter. You will remember, in recently considering eczema, that we had a disease wherein we generally not only failed to find any well-pronounced or pathognomonic diagnostic points, but in various cases almost every known form of lesion, or a host of different kinds of objective symptoms may be present, on no one of which could a diagnosis be made—a disease so variable in its behavior that probably upward of one hundred different names have been used to designate its various forms.

In the disease we are now about to consider, however, we not only always have the same chain or combination of symptoms present by which a diagnosis can always be made with positiveness, but we have several features or symptoms which are met with in this disease alone, any one of which may be regarded as almost pathognomonic. The name of the disease to which we shall now confine our remarks, and which is fairly well illustrated in the case of the man before us, is *psoriasis*.

Let us, however, before directing our attention to this particular case and the symptoms found therein, as is imperatively essential to an intelligent study of any disease, and particularly the diseases of the skin, first get a clear understanding of the characteristics by which the disease is recognized.

This disease, though not so frequently met with as acne or eczema, is comparatively common, ranking next in frequency to the diseases already mentioned. It is not contagious, it may occur in both sexes at almost any age, and is probably more frequently encountered in winter than in summer. When first seen the lesions are usually in the form of small, slightly elevated macules, covered by very fine pearly scales, which lesions may be very numerous, covering a large portion of the body, or may be very scanty. Owing to the peculiar manner in which these lesions are distributed, several names have been employed to signify the different manifestations, such as psoriasis guttata, psoriasis diffusa, psoriasis punctata, etc. As the disease progresses to its full development the lesions become larger and more pronounced, and the scales become more numerous. Usually when first seen the lesions vary in size from that of a silver ten-cent piece to a silver quarter, are round, with well-defined margins and with perfectly healthy skin between the lesions. The patches are always covered by a mass of white, shiny, pearly scales. Though the pearly, shiny scales are not always visible at first glance, by gently scratching with the finger-nail they at once take on the shiny, pearly character. These scales invariably cover the entire lesion to its very margin, so that no portion of the reddened patch, which is always found underneath the scales, can be seen until the scales are removed. On their removal we find a bright red patch, on the surface of which may be seen in several places pin-point oozings of blood. Just here I wish to call your attention to a characteristic that is not laid down in the books: Upon removal of the scales we sometimes fail to find these pin-point oozings of blood, but the fact is, while the scales appear to be all off, there still remains a very thin, transparent film which covers the entire patch. While this may also be regarded as a scale, the point I wish to call your attention to is the fact that we always find this very thin film, and that it is sometimes necessary to scratch almost down into the lesion before getting off the lowest scale or film, which, when once removed, always shows the pin-point oozing. One reason why I wish to call your attention particularly to the presence of this film is because while other diseases, as some forms of syphilitic eruption, for instance, may have scales very closely resembling those of psoriasis, we never in any of them find this characteristic broad, uniform, thin film. The eruption is not only always symmetrical, but general in its tendency, in well-marked cases usually involving the entire surface of the body. By symmetrical we mean an eruption that tends to involve both sides of the body equally, and in psoriasis we almost invariably find this characteristic. When we speak of it as a generalized eruption it must not be implied that the lesions are necessarily very numerous, but that, however few in number, they are sure to be distributed here and there over all parts of the body, usually affecting both upper and lower extremities equally. Now, while the disease tends to involve the entire surface of the body, there are certain localities which it seems to have a preference for. The parts where it is oftenest found are the extensor surfaces. This peculiarity is usually so well marked that we may at times find only a patch on each olecranon process, with perhaps also a patch over each shin or patella. It must not be understood, however, that the disease never affects the flexor surfaces, but merely that it has a preference for the extensor surfaces, and is to be found in greatest abundance on these parts. There are localities, however, where the disease is rarely seen. It almost never affects the palms of the hands or soles of the feet, and it very rarely affects the face to any extent. Even when the scalp is extensively involved, after creeping down slightly over the margin of the forehead the eruption generally terminates there, sparing the face. This point that I now refer to is sometimes very useful in

differentiating it from other scalp diseases. The disease is quite chronic in its tendency and is never characterized by moisture during any period of its existence, being always dry from first to last. There is almost never any itching or other subjective sensation of any consequence; there is no essential constitutional disturbance, and when cured it is very liable sooner or later to return.

Turning now to the patient, we find that he is fifty-two years of age, Bavarian by birth, and that his general health is good. He has been troubled with the eruption on and off for three or four years, having been treated and cured several times during this period. We find, as you see, several patches on the front of each leg, some on each arm, affecting the back or extensor surface more than the front, and particularly the vicinity of the olecranon process. We also find a few spots over the sacrum, and others on the chest. As he passes around amongst you, you will please examine and carefully study the characteristics which we have already described. You will notice that the lesions are round, varying in diameter from one-quarter of an inch to one inch, that the patches are entirely covered by scales, and that the scales are white, shiny, and pearly, which appearance you may more fully develop by gently scratching with the finger-nail. Upon removing the scales you will notice the bright red patch with pin-point oozing of blood. You will notice that the skin between the lesions is entirely healthy, and that the disease terminates abruptly at the margin of the patch, instead of fading off gradually as the redness in eczema and certain other diseases does. You will notice it is both symmetrical and general in its distribution, that there is an entire absence of moisture, and from the fact that the parts are entirely undisturbed and are covered with scales you may at once make up your minds that the finger-nails have not been used for the relief of itching, and, consequently, that the symptom of itching is entirely wanting. You will also notice the points I referred to in regard to the extensor surfaces being principally involved. While the disease involves a considerable surface of the body, you fail to find any lesions upon the palms, soles, or face, and from the fact that the disease has already existed three or four years its chronic character may be established.

Etiology.—As to the etiology of the disease very little is known. It is, however, neither hereditary nor contagious, and may occur at any age in either sex. Inasmuch as it seems to be more frequently met with in cold weather, it is probable that the influence of cold or the dryness of the skin is in some way concerned in its etiology.

Diagnosis.—The diagnosis of this disease is, as I have already intimated, usually not a difficult matter. The pearly character of the scales, the pin-point oozing of blood, and the thin film immediately covering the red patch are almost pathognomonic symptoms of psoriasis.

In obscure cases we must differentiate it from *eczema* on account of the great frequency of the latter disease and its somewhat similar appearance; *syphilis*, owing to the fact that there is the same tendency to general distribution, circular shape of lesion, etc.; *tinea favosa* (favus), *tinea tonsurans* (ringworm of the scalp), and *seborrhœa sicca*, inasmuch as psoriasis when confined chiefly to the scalp, as is sometimes the case, is not distinctly pronounced in its symptoms. By carefully considering, however, the following differential diagnostic table which I have arranged, one need never fail in the diagnosis of psoriasis:

Psoriasis.	*Eczema.*
1. No itching.	1. Usually intense itching.
2. Always dry.	2. Always a history of moisture.
3. Prefers extensor surfaces, the elbows and knees in particular.	3. Prefers the flexor surfaces.
4. Usually a generalized eruption.	4. Never a general eruption.
5. Symmetrically distributed.	5. Never a symmetrical eruption.
6. Scales white, shiny, and silvery.	6. Scales never white, shiny, or silvery.
7. Crusts never form.	7. Always a tendency to the formation of crusts.
8. Lesions uniform.	8. Lesions multiform.
9. Lesions round and well defined.	9. Patches irregular and ill defined.
10. The skin between the lesions always healthy.	10. Always a tendency to diffuse redness between the lesions.
11. Pin-point bleeding on removal of the scales.	11. Never pin-point bleeding when scales are removed.

Psoriasis.	*Syphilis.*
1. May occur at any age.	1. Generally occurs after puberty.
2. No history of syphilis.	2. Generally a history of syphilis.
3. Prefers the extensor surfaces.	3. All parts affected about alike.
4. The lesions are entirely covered by the scales.	4. In the squamous syphilide the red patch is almost never completely covered by scales, but is apt in every case to show, at least, at the margin.
5. Scales white, shiny, or silvery.	5. The scales, though sometimes somewhat lustrous, are generally dirty, yellowish, grayish, or ashy in color.
6. Scales very abundant.	6. Scales generally scanty.
7. Generally a thin adherent film underneath the scales, covering the entire patch.	7. Never a broad thin film under the scales covering the entire patch.
8. Never crusts.	8. Generally crusts, sooner or later.
9. The superficial scales are loose.	9. The scales are all more or less adherent.
10. The redness is bright or inflammatory in color.	10. The redness is dark or copper-colored.
11. Pin-point bleeding on removal of the scales,	11. The bleeding when the scales are removed is never decidedly pin-point in character.
12. Lesions uniform.	12. Lesions multiform, and even in the squamous variety the lesions tend to the papular type.
13. Never destructive.	13. Always destructive, sooner or later.
14. Never affects the palms or soles.	14. Frequently affects the palms and soles.

Psoriasis.	*Syphilis.*
15. Always dry.	15. Generally pus or other moisture, sooner or later.
16. Characterized by frequent recurrences for years.	16. When once cured, rarely recurs, and when it does it is of a destructive character, bearing no resemblance to psoriasis.
17. Patient generally in good general health.	17. Patient generally shows constitutional symptoms.
18. Not affected by syphilitic treatment.	18. Generally cured by syphilitic treatment.

Psoriasis.	*Favus.*
1. No evidence of contagion.	1. Usually a history of contagion.
2. Shiny scales.	2. Never scales, but sulphur-yellow cup-shaped crusts.
3. Not confined to the scalp, but fringes the brow; also usually found on other parts of the body.	3. Almost invariably confined to the scalp.
4. Symmetrically distributed.	4. Not symmetrical.
5. Lesions numerous and coin-sized.	5. Generally only one or a few patches.
6. Hairs normal.	6. Hairs brittle, broken off, and loose.
7. Never any baldness as a result.	7. Generally in all cases some thinning of the hair on the patches.
8. May disappear and return.	8. Never gives a history of having disappeared and relapsed.
9. Disappears readily under appropriate treatment.	9. Very stubborn to cure.
10. No parasite to be found with the microscope.	10. The parasite always readily seen with the microscope.

Psoriasis.	*Tinea Tonsurans.*
1. No history of contagion.	1. Generally a history of contagion.
2. The eruption rarely so scanty but that it may be found on other parts of the body, as elbows, knees, etc.; and in any event is always sure to fringe the brow below the hair.	2. Usually confined to the scalp, but if found on non-hairy skin assumes the well-marked ringworm appearance.
3. Symmetrically distributed.	3. Not symmetrical.
4. Lesions numerous and coin sized.	4. Generally only one or a few patches.
5. Scales white and shiny, and more or less adherent.	5. Scales loose and not lustrous.
6. Hairs normal.	6. Hairs loose, brittle, and broken off.
7. Never results in baldness.	7. May produce some thinning of the hair in the patches.
8. May disappear and return.	8. Never gives a history of having disappeared and relapsed.
9. Easy to cure.	9. Very stubborn to cure.
10. No parasite to be found with the microscope.	10. The parasite always to be found with the microscope.

Psoriasis.	*Seborrhœa Sicca.*
1. White, shiny, dry scales.	1. Thick greasy scales or small crusts.
2. Rarely confined to the scalp, but fringes the brow, and generally found on other parts, as elbows and knees, etc.	2. Generally confined to the scalp.
3. Symmetrical, but not diffuse.	3. Symmetrical and diffuse.
4. Distinct coin-sized lesions, with healthy skin between them.	4. No lesions other than, at times, some general hyperæmia.
5. Hairs generally normal.	5. Usually some general falling of the hair.
6. Never produces thinning of the hair.	6. If not arrested early, produces some permanent general thinning of the hair.

Treatment.—As the disease is more or less chronic in character, with a tendency to return, naturally very many remedies, both internal and local, have been made use of at various times with a view of curing and eradicating the disease. The disease, as already stated, is always characterized by the same symptoms, regardless of the case or stage of the disease, so that the treatment may be more or less uniform, and I need only occupy a few minutes of your time in considering this part of the subject. As in most other scaly eruptions, the first thing to be done is to get rid of the scales. This is best accomplished by the use of (two or three times a day at the beginning of the treatment) some oleaginous preparation, as any simple ointment, combined with the daily use of plenty of hot water and soap, with a rough towel or flesh-brush for the purpose of getting rid of all the scales that have already been softened by the oiling process. When the scales have been pretty thoroughly removed, the best remedy or local application is ten grains of chrysarobin to the ounce of lard, vaseline, or other similar substance. This remedy, to be effectual, must be thoroughly worked into every individual patch on the surface of the body once or twice a day. In two or three days the oiling, soaping, and washing process must again be resorted to to get rid of the scales which have re-accumulated. By following up this process, almost every case of psoriasis may be cured in the reasonably short space of a few weeks. The other remedies which may be used are pyrogallic acid, citrine ointment, naphthol, etc. As to constitutional treatment, I think the majority of dermatologists favor the use of some form of arsenic, psoriasis being the disease of all others wherein arsenic is said to be necessary or beneficial. Arsenic may be given in the form of Fowler's solution, beginning with a dose of five drops and gradually increasing till the full dose is reached. I mention arsenic, however, in the treatment of psoriasis, not because I think it is essential or useful, but because it is usually recommended and used. In my own practice I have not used arsenic for six years in the treatment of psoriasis, and, as far as I am capable of judging, I am able to cure the disease just as well without it, or other constitutional treatment, as with it. It may have a tendency to prevent the return of the disease, but I think even this is doubtful.

163 STATE STREET.

THE TYPES OF INSANITY.

A Clinical Lecture,
delivered before the Class of the Woman's Medical College at the Cook County Insane Asylum.

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LADIES: Through the kindness of Dr. John A. Benson, Superintendent of this Asylum, we have before us to-day a number of cases illustrating the several types of insanity to which your attention has already been called. First, we have four cases of *melancholia*, cases of insanity that show mental depression. This boy's case is a comparatively recent one, and his attitude is that common to the disease. You notice that he sits with his head bent upon his chest. He has no inclination to straighten himself up and show us his facial expression, which would reveal the mental misery he has endured. These cases of melancholia show not only depression of mind but great depression of all the functions of the body. The temperature is below normal, the circulation is feeble, the skin is cold and clammy, the tongue is coated, the digestion is impaired, the bowels are constipated, the assimilation is defective, the pupils are dilated, and in the beginning there is more or less discomfort in the head, a sense of fulness or an absolute pain. They steadily lose flesh in the early stages of the disease. This patient is suicidal in his tendencies, as are many cases of melancholia, and requires, therefore, the closest possible observation and care to prevent him from taking his life.

I now show you another case of melancholia, of longer duration. This patient has had the disease for the last two years, and the profoundness of the mental depression has disappeared. You notice that he does not show, in as marked a degree, the attitude spoken of as characteristic of the recent cases, or the profound depression of mind as manifested by the facial expression. Melancholia is of variable duration, say from two to twelve years, and then, if recovery does not occur, the patients gradually drift into a condition of mental enfeeblement or secondary dementia. We are informed by Dr. Rund that this patient is now failing in mental power, and gradually passing into this condition of dementia. Now, in the early history of melancholia there is no failure of mind, but the patient is simply under a delusion that gives rise to the characteristic symptoms of the disease, this delusion of course being based upon the malnutrition of the brain; but the memory and all the ordinary faculties of the mind are as vigorous as before.

The next case of melancholia I present is of shorter duration, and you will see in this patient the usual attitude and facial expression, and the evidences of general psychical disorder. She refuses to eat, for she has the delusion that her food is poisoned. Many cases of melancholia have this delusion to a greater or less degree, and require forcible feeding by means of a stomach or nasal tube to prevent their carrying out the suicidal proclivities. She answers no questions. Some melancholic patients are under the delusion that if they speak, great calamities will befall them or their friends, consequently they will say nothing. She probably has such a delusion.

Melancholia is a very interesting type, from the standpoint of the etiology and treatment of insanity, because almost every case of insanity begins as melancholia, the period of depression lasting in some cases only a few days, in others a few weeks, and then the condition of mania, or other permanent form of insanity, ensues.

Now, if we had the history of these cases, we would probably find that there had been a period of several weeks or months when sleep was imperfect, appetite poor, digestion impaired, and assimilation defective. This being the pathogenesis of most cases, the treatment becomes evident. If you can catch the patients, as will often be your opportunity as family physicians, in the very beginning, when the insomnia, the digestive and assimilative disturbances have commenced, then by the judicious use of sleep-producing remedies, digestive agents, nutritious food, etc., you may be able to arrest the progress of the disease and thus abort insanity. It is your duty as family physicians to watch carefully the digestion, assimilation, and elimination of those who have a neurotic or insane diathesis, for by doing this you may avert the storm.

The medical profession to-day is more fortunate than ever before in the number of sleep-producing remedies. Sulphonal is a comparatively recent remedy of great value. It does not interfere with the digestion, the circulation, or the heart's action as chloral, the bromides, and opium frequently do. We have also the still more recent remedy chloralamid. It has some advantage over sulphonal in that it acts more rapidly, and when dissolved in wine has but little taste. Sulphonal, on the contrary, probably by reason of its great insolubility, often acts slowly, its effects being more manifest the next day than on the evening of its administration. You can often administer either of these remedies without the patient's knowledge, as they have but little taste.

These patients require an abundance of food, and are much benefited by the judicious use of alcoholic stimulants; alcohol, as you are aware, in moderate doses, being a food. A very desirable way to administer it is as eggnog, and three or four, or even five or six, eggnogs in twenty-four hours can be administered to them with benefit. You must also pay attention to their elimination. They need mild laxatives and mild alteratives. Small doses of aloin and blue mass will assist you very materially in keeping the alimentary tract in good condition.

MANIA.

We have before us now a series of cases which illustrate the state of mental exaltation called *mania*. You notice how they differ from the melancholics in their facial expressions and attitudes. They hold their heads up; the corners of their mouths are not drawn down. These patients do not suffer the untold agonies of the other class, and, indeed, are more or less happy. There is but little derangement of the digestive organs. They often smile, and they are in a more or less constant state of movement. Here is activity, while in the other cases you just saw we had the opposite condition. Melancholic patients sit still; they scarcely move a muscle; maniacs are in a state of continual activity.

In all of these cases of mania there is no enfeeblement of mind, but simply a disorder of mind. Probably most of these cases began with melancholia. For a few days or weeks they were depressed, and then they passed into this condition of activity. These cases, like the others, finally pass into a condition of mental enfeeblement, but more rapidly. They gradually lose their memory, reason, judgment, and power of instituting comparisons as to likenesses and differences of things. Cases of mania usually reach the condition of dementia in a year or two; cases of melancholia may remain as such for five, six, or a dozen years. As a rule, maniacs eat well, but do not sleep well. There is but little derangement of the digestive organs. This condition of continual activity means a great deal of tissue waste, which, associated with poor sleep, causes them to drift more rapidly into a condition of mental enfeeblement than do the others, who spend their time in such quietude of body.

CIRCULAR INSANITY.

The next type of insanity to which I call your attention consists of cases characterized by alternating changes in the mental state, or *circular insanity*, as it is sometimes called. These cases have their periods of depression, followed by intervals of comparative lucidness of mind, to be followed again by a period of depression, and then a period of excitement. We have, therefore, alternations of depression, of excitement, and of lucidness. One form of this mental alternation is called katatonia. The case I now show you illustrates this condition. You see how her arm remains in a fixed position. She is now in what is called the cataleptic state, which every case, of katatonia has for a time. This cataleptic state only lasts for a few days, and we are informed that she sometimes becomes violent. This condition of mental depression will become more and more pronounced as the cataleptic state advances, and after a while she will pass into a condition of violent excitement; then that period of violent excitement will pass away and she will return to her usual mental condition.

Here is another case passing into the cataleptic condition. After a while the catalepsy will pass away and the arms will resume their proper function, when we will have excitement and a period of comparative freedom from manifestation, and then the circle will be completed. The patient has three days of depression, and then three days of excitement, with great regularity. The next patient which you see is in a state of exaltation. This will be followed by depression, which will last for some days or weeks and then pass away, and he will again become excited. Thus do these cases of mental alternation go on completing the round, with little or no prospect of complete recovery.

MONOMANIA.

I will now show you some cases of *monomania*, that form of insanity in which the patients have fixed and limited delusions. Cases of monomania are sometimes very perplexing. The area of delusion may be very slight. There is a large number of these cases going about attending to their business in a fair way. It is only when the delusions become of such a character and of such a range as to make them dangerous to themselves or to the community in which they live, or to interfere with their daily avocations, that it will be necessary for them to come here. Such cases are perplexing, and it is usually almost impossible to make a correct diagnosis, their delusions being limited and the remainder of their mental operations being normal. They can conceal their delusions so that it requires considerable knowledge or expertness to make a diagnosis.

I had one of these cases of limited delusions at my house last night. He talked to me on general topics as well as a man with his education could talk, but with a slight nervousness in his manner and twinkling in the eye. No one would suppose that there was anything the matter with him. But as soon as I touched on religious topics, he assured me that he was the Lord Jesus Christ, and was going to reform the world. He talked for a long time on religious subjects in an insane way, but on any other matter his conversation did not differ from the majority of people. So it is with all these cases of fixed and limited delusions; unless you strike their delusions, you may labor with them for days without success.

The woman on my right has the delusion that she is Prince of the Roman Catholic Order; while the one on my left has communications with spirits. A third regards herself as the King of Sweden.

I have a patient under my care who is perfectly well, except that he will not walk. You cannot get him to walk for fear somebody will knock against his legs and break them.

Here is a patient who thinks her soul will be damned. Upon all other questions she is rational, and there is no special amount of depression in her face.

TERMINAL DEMENTIA.

I will now direct your attention to cases of *terminal dementia*, a disease that begins as mania or melancholia and continues thus for a variable period of time, and then passes into the state of dementia. It takes cases of melancholia a long time to reach this condition of mental fatuity, while cases of mania reach the condition rapidly. Two or three years will be sufficient for a case of mania, while eight or ten years may be necessary for a case of melancholia to undergo the change.

This case now before you was at first one of acute mania, then became one of chronic mania, and then dementia. Her excitement is gone, and with it the mind. Sooner or later she will be in a condition of fatuity. The mental state of these cases of terminal dementia is much like idiocy or imbecility, forms of mental enfeeblement that are the result of an arrest of development. Here there has been a destruction of the brain cells and brain fibres: in idiocy there is insufficient development of cells and fibres.

IDIOCY AND IMBECILITY.

We will now present to you cases of mental enfeeblement due to an arrest of brain growth either before or after birth. Of this form of insanity there are two types, *idiots* and *imbeciles*. The difference between the two conditions is simply one of degree. According to the standard of the English law, an idiot is a person who cannot count ten. These cases of mental enfeeblement have reached this condition because of an arrest of brain growth, not necessarily as a consequence of disease.

The patient on the right is an extreme case of imbe-

cility, and we might call her an idiot. This woman on my left has manifestly more intellectual capacity than the other and may fittingly be called an imbecile. Many cases of congenital or acquired enfeeblement are characterized not only by failure in the growth of the brain, but by an arrest in body development as well. Some cases of imbecility and idiocy show very marked congenital defects in the growth of the fingers, arms, legs, and teeth.

GENERAL PARESIS.

I now ask your attention to another interesting form of insanity, a type that has a positive pathological basis. Just what the pathological changes of the manias, the melancholias, and of the monomanias are we do not know; but these cases of *general paresis* have a positive pathological substratum on which they rest.

Here is a case of general paresis, paretic dementia, or general paralysis of the insane, a disease that is almost always characterized by grand delusions. This man says he feels first-rate. Notice the peculiarity of his articulation, the thickness of his speech, the excessive movements of his lips in speaking, and the tremor of his tongue. These patients are happy in their delusions as a rule. A few cases of paretic dementia begin with melancholia, and you must remember this in your diagnoses. As a rule the latter are females, and usually of a tubercular diathesis.

Notice the pupils of the patient on my right; one pupil is contracted almost to a pin-point, the other is dilated, and neither responds normally to light. The pupillary condition of the patient on my left is different. Both pupils are dilated, but neither of them responds to the action of light. Some of these cases of general paresis have no pupillary reflex whatever.

The next patient says he has three professions combined in one. He is a decorative painter, a lawyer, and a doctor, and thinks he has cured a great many cases of insanity, and was successful as a lawyer. He believes that he is the richest man in the world. We find in his case diminished pupillary reflex, and one pupil a little more contracted than the other. There is also loss of patellar-tendon reflex, the same peculiarity in articulation, and more pronounced grand delirium.

Here are some cases that show more enfeeblement of both the body and mind. There is more pronounced muscular paresis in this case than in any of the others which I have shown you. This process of deterioration goes on until they become bedridden and completely paralyzed.

The characteristics of these cases of general paresis we may enumerate as grand delirium, delusions of an exalted character, disturbance in articulation, excessive movements of the facial muscles in articulation, usually contracted or dilated pupils not responsive to light, then gradual, progressive enfeeblement, loss of power of mind and body, etc.

These patients, as I have before remarked, have a positive pathological history. They are all cases of *meningo-encephalitis* involving the motor territories of the brain. Some of them in the early stages, I believe, can be greatly benefited by treatment, but when they pass on to this condition of paresis so manifest in two of the cases you have seen, there is nothing whatever that can be done except to make them comfortable. Many of them have a syphilitic history, and if they are treated vigorously with the iodide of potassium and a judicious selection of tonics, mental rest, and counter-irritation by means of blisters the size of a silver dollar over the territory that is the seat of this inflammatory process, some will be greatly improved and a few may recover.

DEFECTIVE INHIBITION.

Here are two cases which illustrate another and very important type of insanity, to which I will ask your attention very briefly, that of *defective inhibition*, a state that is characterized by irresistible impulses. Both of these patients have epilepsy and are homicidal. Without any reason, such patients commit violations of law of various kinds. During this state they are entirely unconscious of what they do. They may manifest their disease by an irresistible or uncontrollable impulse to kill, burn, or steal.

Cases of irresistible impulse are of very great importance from a medico-legal standpoint, and they are often extremely difficult to diagnose. It is common when a person commits some criminal act to plead irresistible impulse, and you will time and again be called upon to determine this condition. If this irresistible impulse is due to disease, surely such persons should not be held responsible for their crimes, but should be carefully put away so that their uncontrollable impulse will not again damage society. Every now and then you will be called upon to determine whether, in a given case, the murder was the consequence of this defective inhibition, the outgrowth of disease, or whether it was simply want of proper moral capacity—a crime and not a disease. I believe that many of these cases of defective inhibition showing a violent fury and uncontrollable impulse are simply a manifestation of the epileptic condition. I have often seen cases in which this impulsiveness took the place of the ordinary convulsive seizure; just about the time when the patients should have a convulsion they do something of an impulsive character. The nerve explosion simply went out through the emotional territories rather than through the motor centres, and instead of having a convulsion they had this manifestation of emotional activity. In making a diagnosis, each case must stand by itself. If a person goes around in broad daylight stealing things that are of no earthly value or service to him, it is certainly not a criminal act. For instance, a man went into a lawyer's office a short time ago and carried off his books and chair. The lawyer went after him, and when he was questioned about it afterward he was entirely unconscious of the act. That man was not responsible for what he had done, for the theft was committed when he was in an epileptic condition.

Here is another case of defective inhibition. The interesting feature about it is the treatment he has had. Notice the color of his skin; he has chronic argyria. The nitrate of silver was given him as a cure for epilepsy. There have been a few cases of epilepsy benefited by the nitrate of silver, which is a stomachic tonic and alterative. This patient, however, took too much of it, hence the blueness of the skin which you notice. He took it for six or seven years. Nitrate of silver is a good remedy, but I do not believe it should ever be given

continuously for more than ninety days. I am somewhat fearful of its administration for even sixty days. Sixty grains of nitrate of silver are as much as is absolutely safe to give without interruption. The third of a grain is the ordinary dose, and if he took nitrate of silver at that rate for years, he must have taken a large quantity.

The treatment of epilepsy with nitrate of silver is not much in fashion to-day. Nitrate of silver is confined now to such diseases of the nervous system as sclerosis of the spinal cord, especially locomotor ataxia.

70 State Street.

ORIGINAL ARTICLES.

THE OIL-SILK JACKET IN THE TREATMENT OF BRONCHIAL ASTHMA.

By SAMUEL C. BUSEY, M.D., LL.D.,
of Washington, D. C.

The investment of the chest in a jacket made of oil-silk or other impervious fabric, and wadded or not with absorbent cotton or other form of cotton-wool, in the treatment of bronchial and pulmonary diseases, more especially bronchitis and pneumonia, has been in quite common use for many years, but I am not aware that any one has previously suggested such investment of the chest as a method of treatment in cases of bronchial asthma.

The object, therefore, of this brief paper is to present the value of the continuous wearing of an oil-silk jacket as a method of preventing the recurrence of attacks of that form of bronchial asthma which is ascribed to atmospheric conditions, and usually complicated, sooner or later, with more or less bronchial catarrh. To illustrate the effect of this use of this jacket I cite the following cases, which comprise about one-half of the cases to which it has been applied by me with equally beneficial results:

Case I.—Mrs. M., aged forty-three years, the mother of five children, was seized during the winter of 1884 with her first attack of bronchial asthma. During the autumn of 1885 her second attack occurred, and in the winter of 1886 the third. In October, 1886, with the beginning of the first "cold snap," the premonitory symptoms of a fourth attack began. The chest was immediately invested in a jacket, which had been previously prepared at my suggestion. The attack was aborted and no recurrence took place during the autumn and winter months of 1886 and 1887, when the jacket was continuously worn. In like manner she was protected from any attack during the following seasons of 1887–88 and 1888–89. In October, 1889, whilst on a visit to New York, and whilst standing on the high bridge over the East River, her respiration became very laborious, which proved to be the precursor of a pronounced and very severe attack of bronchial asthma. The jacket had not been replaced since the previous spring, and was not put on until near the close of this attack. It was afterward continuously worn until about January 1, 1890, when it was removed because of discomfort incident to the unseasonable and warm weather. Since its last removal she has had numerous very slight attacks of dyspnœa, coming on during the early morning hours, but disappearing after sunrise. None during the time it was worn.

This lady was passing through the period of menstrual decadence, and suffered from some of the usual and other extraordinary nervous conditions, which were mainly referable to the cerebral and circulatory functions, and incident to the change of life, but the asthmatic attacks did not seem to be directly connected with the nervous perturbations.

Only a few days ago she told me that she never had had an attack while wearing the jacket, and that since leaving it off she was frequently very uncomfortable, but would persist in her present course until a more severe seizure occurred. She stated also that the attack last October was induced by the elevation, and that for several years she always has had difficult breathing upon making a visit to Capitol Hill, an elevation of about eighty feet above her residence, and that the attack would be relieved by returning to her home.

Case II.—W. B., aged thirty-two years, was born and lived until he reached maturity in a neighboring county in the State of Maryland, and in a locality near extensive marshes and surrounded by lowlands subject to overflow during heavy rainfalls. At the age of three years, after sudden and prolonged exposure to falling temperature, he was taken with a very bad cold, characterized mainly by great difficulty in breathing. From this date he has been subject to frequent similar attacks, usually occurring during the autumn and winter seasons, and increasing in frequency with growth and age. At the age of twenty years he removed to Baltimore and two years later to this city. While residing in the country he lived an active outdoor life on a farm, but since coming to Washington has passed a sedentary life as a freight clerk in one of the railroad offices, subject to great hardships and exposed to the vicissitudes of the weather and fluctuations of temperature night and day. Since leaving the country the attacks have increased in frequency, duration, and severity, and in June, 1889, for the first time during the summer season, he had a very protracted and distressing attack, and another, equally severe, in September. During the interval between these he had several slight attacks, which did not confine him to the house. In his earlier life the asthma was usually preceded, for a day or two, by sneezing, then a slight cough followed by laborious breathing, usually lasting several days or a week, with remissions during the daytime and recurring paroxysms during the night. Since residing in this city the remissions have been less marked and the night paroxysms more pronounced and distressing. During the last two

attacks, June and September, 1889, there was no marked difference between day and night, and when they began to subside the improvement was progressive during day and night. During the past five years I have attended him in many attacks, but did not see him in the beginning of any, except those in June and September, 1889. They presented similar clinical pictures of aggravated bronchial asthma, characterized by great dyspnœa, a harassing cough, cyanosis, immobility of chest walls, inability to lie down, sleeplessness, anorexia, with diffuse sibilant and sonorous râles, audible hissing and wheezing sounds, copious fluid expectoration, and bronchial catarrh. During the September attack I had him fitted with an oil-silk jacket, which he has since worn continuously, with renewals every four or six weeks, as has been necessary. He has not had a subsequent attack, notwithstanding greater exposure during a more inclement season and the remarkable prevalence of the recent disastrous epidemic. Thus, for the first time in twenty-nine years, he has escaped an attack of asthma during the late autumn and winter months.

CASE III.—J. M. D., aged five years, a vigorous boy, in good general health, and with a good family history, had, during the spring of 1888, an attack of difficult breathing, with cough, recurring in nightly paroxysms during several consecutive nights, which the physician in attendance pronounced asthma. During the autumn and winter seasons of 1888 and 1889 similar but more aggravated attacks recurred several times, and in October, 1889, he had the last, and the only one that I have seen. At my first visit I ordered the oil-silk jacket, which, with the usual and necessary renewals, has been continuously worn. No attack has occurred since. He has suffered with a moderately severe attack and a less severe relapse of the influenza, but has continued free from any asthmatic conditions.

The etiological relation of atmospheric conditions to bronchial asthma are capricious and variable. Asthmatics are differently affected by apparently similar conditions; some suffering more, some less, and others not at all during the same seasons and when exposed to the same fluctuations of temperature and weather changes. For instance, I know a gentleman who secures absolute relief by changing his sleeping apartment from his residence in this city to the adjoining city of Georgetown, whereas resident asthmatics of the latter city are at the same time suffering; and a second who never had an attack after removing from one residence to another, two squares distant; and a third who was permanently cured by removal from a house, in the cellar of which was a flowing spring of drinking water. It is, I believe, admitted that some city asthmatics find relief by removal to the country, and that country asthmatics sometimes secure relief by city residence. Seasonable conditions are equally variable. During some seasons in the same locality all asthmatics will suffer, at other periods some will suffer and some escape. Some suffer frequently, some annually, and some bi-annually, without apparent cause of difference.

These circumstances point to individual peculiarities and differences in personal and domiciliary hygiene as exciting causes, which must necessarily invalidate the claim of any method of prevention which has not been tested by its application to a large number of victims, during a sufficiently long period of years to include every variety of atmospheric condition and to eliminate all other causes.

It may, therefore, have so happened that the method of treatment was applied to patients during periods when they would have been free from any attack. It is, however, submitted for further and more extensive trial, which will certainly establish its value or prove its uselessness.

THE TREATMENT OF COMPOUND FRACTURES, BASED ON AN ANALYSIS OF ONE THOUSAND CASES.[1]

BY FREDERIC S. DENNIS, M.D.,
OF NEW YORK.

THE subject of this paper is not of my own selection, but is one which has been assigned to me by the esteemed President of the Philadelphia County Medical Society. It is a subject, however, which may be designated as the touchstone of surgery, because a discussion of the treatment of compound fractures includes all the great principles involved in every department of the science. It embraces a consideration of cerebral, thoracic, and abdominal surgery; it includes a discussion of the great principles of antisepsis, it covers operative technique, it embraces the study of surgical pathology, it touches upon the higher departments of the science, and opens up the field where surgery must be considered as an arena for the exercise of sound judgment, for the display of clear foresight, and for the exhibition of accurate knowledge and ripe erudition. Finally, a full discussion of this subject inevitably leads to a consideration of the progress of surgery during the present century and its precise status at the present day.

In considering the management of compound fractures, I shall confine myself to the salient points which an extensive clinical experience has taught me to be the most essential for success. The 1000 cases from which I shall derive material for discussion have occurred during the past decade in four metropolitan hospitals devoted to the treatment of acute surgical cases, and also in private practice. The accumulation of so vast an amount of clinical material has been attended with great clerical labor.

[1] Read by invitation before the Philadelphia County Medical Society, April 9, 1890.

The conscientious treatment of these serious cases has been attended with a sense of great responsibility, and the results which I shall report have been attained only by close attention to the minutest details in the management of each individual case. There are some points in the treatment of compound fractures that deserve special consideration, and it is only by a study of these cases in groups that clinical facts of essential importance can be established. I have carefully watched the results of the same plan of treatment in many cases at the same time, and it has been by a process of evolution that some of the opinions which I shall enunciate have become fixed laws in routine practice. To see in one day nineteen cases of compound fractures in the same ward with a normal temperature is not a coincidence. The number might possibly be, but the same condition in all is the result of the application of fixed principles which have been established as the result of long study and observation. To see upon another day twelve cases in the same ward and all with normal temperatures, as happened during an unexpected visit of the President of the Philadelphia County Medical Society, removes all question of coincidence. These circumstances make it evident that the application of fixed rules is necessary to arrive at certain and uniform results.

Before entering upon a description of the manner in which the first dressing of a compound fracture should be applied, I desire to call attention to the management of the fracture preparatory to its first dressing in the hospital. The fate of a patient with a compound fracture often hangs upon the surgeon who first touches it. Whenever the circumstances are within the control of the surgeon, I would go still further, and recommend that ambulance surgeons should exercise great care in the transfer of a compound fracture to the hospital. I have made it a rule of practice at the Harlem Hospital that antiseptic irrigation should be employed at the station-house or upon the sidewalk before the temporary splint is adjusted, and that at once after the irrigation, a clean antiseptic dressing be applied before the patient is lifted into the ambulance. I feel sure that the success of treatment in the present list of compound fractures is in great part due to a strict adherence to this important rule. Contrary to my expectations, I have found these directions willingly and cheerfully obeyed by the ambulance surgeons, who now realize how important is their position in the matter of antiseptics.

The patient having been carried either to the hospital or to his home, the temporary dressing is now to be removed, the fracture adjusted, and the first dressing applied. I cannot emphasize too strongly the point that the *first and aseptic dressing will largely influence the prognosis.* This dressing, therefore, should be made in the operating room, because the germ-laden air of the hospital ward is not a safe place to expose a compound fracture. The instruments, sutures, ligatures, drainage-tubes, and everything possibly required for the operation should be immersed in carbolic acid solution (1 to 40). Several towels wrung out in a solution of bichloride of mercury (1 to 500) should be prepared for use about the table and around the limb, in order to protect the fracture from any possible contact with a surface not rendered aseptic. The wound itself should be covered by antiseptic gauze, while the limb is washed with soap and water, then shaved and irrigated. Upon the limb is then poured a saturated solution of naphthalin in ether. This application removes all the fat, and the solution crystallizes upon the surface and protects the parts.

Having made aseptic all the adjacent parts, the wound itself requires attention. All blood and débris should be washed away by a stream of warm bichloride of mercury solution (1 to 4000). The interior of the wound should be thoroughly irrigated with the same solution, and all hæmorrhage completely arrested. Loose pieces of bone not attached to periosteum should be removed. All pieces of fascia, fatty tissue, muscular shreds, and lacerated integument should be cut away with scissors, and then a final ablution made. The drainage-tube should be introduced into the bottom of the wound, and if the wound is so situated as to drain well, there is no necessity for a counter-opening. The tube is then cut off flush with the surface of the skin, and fastened by a safety pin. The wound is now closed by catgut sutures, which completes the operative technique. The towels should now be changed and clean ones substituted, which should also be wrung from bichloride solution. The limb is now in readiness for the application of the antiseptic dressings. This dressing, above described, can be done without an anæsthetic, and as a rule with little or no pain. When the compound fracture is extensive, it is necessary to administer ether, so that the dressing can be completed from the beginning to the end while the patient is under the influence of an anæsthetic. The fragments can now be adjusted, and if the displacement is great, a silver wire can be introduced to keep them in place. Again, it may be necessary to introduce, besides the wire through the bone, some deep catgut sutures, which are carried through the muscles. Deep sutures are necessary in all extensive and gaping wounds of the soft parts, especially when such muscles as the biceps and triceps, or the quadriceps extensor, are divided. These sutures must be independent of the superficial set. Such wounds as just described require free drainage, and counter-open-

ing is necessary in order to meet the requirements of the case.

Another class of compound fractures is often met where the wound is very small, and with these cases a different plan should be adopted. The irrigation should be made around and in the wound, and then it can be hermetically sealed by sprinkling iodoform over the perforation, and painting styptic collodion over the iodoform, and then irrigating with an antiseptic solution. This mixture will soon coagulate, and the medium of sealing is surgically clean, and then the fracture is ready for the antiseptic dressings. Thus it is evident that the small wounds can be hermetically sealed; the medium sized wounds closed by sutures and drained through the existing opening; and the large wounds drained by a counter-opening and sewed with deep sutures, and the fragments held together by silver wire.

Having completed the operative technique, in one of the three ways mentioned, the parts are now prepared for the antiseptic dressings. Iodoform gauze, or a small piece of oil-silk protective, should be placed over the wound, with a hole cut in it to allow the mouth of the tube to drain into the dressings. Iodoform gauze is used, because bichloride gauze irritates the wound. The bichloride gauze is next applied in loose pieces over the iodoform gauze and around the wound. This dressing is moist because dry antiseptic dressings next to a wound are sources of infection. The loose and wet gauze is held *in situ* by the application of a moist bandage. Over this deep dressing, absorbent cotton is placed and retained by a dry bandage.

The last dressing affords a means of securing equable and uniform compression around the limb and over the fracture. The cotton by its elasticity expands and contracts so as to accommodate itself to the swelling of the parts in the vicinity of the fracture. This part of the dressing is very important as a means of preventing inflammatory swelling and of affording comfort to the patient. Four strips of sheet iron about one inch in width are now adjusted. One strip is to pass down on the posterior part of the limb, and over the heel and upon the sole of the foot. Two strips are placed upon the sides of the leg, and one upon the front of the leg, and bent so as to conform to the shape of the dorsum of the foot. Over these strips, plaster-of-Paris bandages are now applied, and the dressing is completed. The strips prevent any backward as well as any lateral displacement of the fracture, and also do away with the necessity of a heavy splint.

In three days a fenestrum is cut over the wound and under continuous irrigation the drainage-tube is removed.

The question of how long this first dressing should remain is a pertinent one. My experience in the treatment of this injury has taught me that no splint should be left on a limb longer than eight days without an inspection of the compound fracture. I have seen several bad results arising from a neglect of this rule. In one case I saw a fracture which was skilfully dressed with plaster-of-Paris examined at the expiration of six weeks, during which time the patient's condition was in every way satisfactory. Upon removal of the splint the bone was protruding, and considerable union had taken place. An osteotomy corrected the deformity, and in six additional weeks a perfectly satisfactory result followed. If this fracture had been examined the protrusion of the bone would have been detected, and the faulty position rectified. While this result is exceptional, such unfortunate complications can always be obviated by an inspection of the fracture after eight days.

There are some new questions which have arisen, that are of interest when discussed in the light of recent revelations in surgical pathology. Among the many subjects for special study and observation, I have selected a few which seem to me to possess unusual interest in connection with the report of these compound fractures:

1. Meningeal hæmorrhage, and fractures of the base of the skull.
2. Fat embolism.
3. Insanity following fracture of the skull.
4. Malignant disease.
5. Tenotomy.
6. Healing by Schede's method.
7. Amputation.
8. The conversion of simple fractures into compound or complicated fractures.
9. Compound fractures involving the major joints.

1. *Meningeal Hæmorrhage.*—This variety of hæmorrhage occurring in compound fractures of the skull is a subject about which much diversity of opinion exists. It has been the routine treatment for many years to ligate the common or external carotid artery in case of severe hæmorrhage from the middle meningeal artery or one of its large branches.

Among the cases in my list of compound fractures of the skull is one which is of great practical interest as bearing upon a new method of arresting hæmorrhage. In the case referred to, a man received a severe compound fracture of the skull upon the right side of the head, followed by paralysis of the left side of the body. The accident was caused by a stone weighing 700 pounds falling upon his skull. I trephined the seat of fracture, and removed over forty pieces of bone, which were loose in the wound, of which two fragments were larger than a twenty-five cent piece. I also found a large epidural blood-

clot, nearly the size of the palm of my hand. I removed the blood-clot, and found the middle meningeal artery bleeding to an alarming extent. The hæmorrhage was controlled temporarily with sponges and tampons, until I was able to remove more bone in order to secure the open vessel. Having removed bone to the extent of six inches, I attempted with artery forceps to seize the bleeding point. Every attempt failed, and I was unable to grasp the artery because, whenever the ends of the forceps were applied to the dura, this membrane was pushed down, and the forceps could not be made to catch hold of the bleeding point. The idea suggested itself to me in this crisis to introduce the point of a tenaculum through the membrane in such a way as to include the bleeding vessel in the curve of the tenaculum. With this instrument I now raised up the dura from the brain on a level with the bone, and then applied the artery forceps. The membrane, which before receded from the grasp of the forceps, and formed a tense, concave surface, was now held firmly, and that part between the curve of the tenaculum was lax, and permitted the forceps to seize tissue and artery. The vessel was tied with catgut, and the hæmorrhage was arrested. The paralysis upon the left side of the body disappeared. The wound healed in an aseptic manner, and the patient recovered so far as the operation was concerned. He died some time after the injury, and I was enabled to secure an autopsy, which was made by Dr. Grauer. There was nothing in the brain, or in its coverings, which could have caused death; the patient had died from exhaustion and inanition, with no local brain lesion. The use of the tenaculum in the manner described—to seize a torn middle meningeal artery through an opening made in the skull—seems to me a better operation than ligation of the external or common carotid artery in its continuity. Besides the question of the arrest of hæmorrhage by ligation of the meningeal artery by means of a tenaculum, another question has arisen in connection with these cases of meningeal hæmorrhage; that is, the possibility of a surface clot by *contre-coup*, the existence of which has been denied by many surgeons. I have three specimens, which I believe will settle this long-disputed question.

In the first of these cases, a policeman found the man in a condition of what was supposed to be intoxication. He walked to the station-house with the officer and was locked up for the night, and upon the following morning was brought before the police justice and sentenced to ten days' confinement on account of intoxication. At eleven o'clock he was returned to the station-house, awaiting the time to be sent to the Island. While in the cell, a few minutes after his arrival, he became unconscious; an ambulance was summoned, and he was taken to the Ninety-ninth Street Hospital. I saw the patient that day, and from the peculiar history of the case and the presence of paralysis, I diagnosed meningeal hæmorrhage. The patient was anæsthetized, and the uninjured scalp was incised, exposing to view a linear fracture. The trephine was applied, and an epidural clot was discovered. The dura was torn, and the brain substance lacerated. The wound was dressed antiseptically. In fourteen hours the patient died. The autopsy revealed the presence of a second epidural clot, which was almost opposite, and was the result of *contre-coup*. The scalp over the skull corresponding to this clot was normal, as was the scalp upon the opposite side, and the bone over the *contre-coup* clot was not injured.

The second case was brought to the hospital in an unconscious condition with general paralysis. The case was supposed to be a fracture at the base of the skull. The patient died the next day, and the autopsy showed a linear fracture of the parietal bone upon one side and extending to the middle fossa. Under the fracture was a large epidural clot, and upon removing the calvarium another surface clot was found at a point directly opposite to the fracture. This fracture did not extend upon the other side of the skull, and the clot here was also the result of an injury by *contre-coup*.

I have seen during the past winter another case similar to the two just described. These three specimens settle the important question whether a meningeal hæmorrhage may be produced by *contre-coup*. The diagnostic points of epidural meningeal hæmorrhage by *contre-coup*, or by traumatism without fracture, suggest operative interference in these cases.

The presence of symptoms of cerebral irritation followed by unilateral paralysis, with a slow, full pulse, the Cheyne-Stokes respiration, accompanied by a sudden rise of the temperature due to disturbance of the heat centre, form a group of symptoms which, if preceded by a short interval of lucidity after the injury in which no serious manifestations of brain lesion were present, make it extremely probable that an intracranial meningeal hæmorrhage has occurred.

These symptoms appearing at the time, and in the order mentioned, with or without any fracture, would indicate the application of the trephine over the seat of pressure, the removal of the clot, and the ligation of the middle meningeal artery through the opening made in the skull by means of a tenaculum applied in the manner already described. To some this may seem too bold; but when the fact is considered that formerly nine-tenths of these cases perished under the expectant plan of treatment, and further when it is considered how safe the operation of trephining is with antiseptics, it would seem that a surgeon might be derelict in his duty if

he did not remove a portion of the skull to take away the clot and arrest the bleeding. Within ten days I have trephined and removed a clot from the right ventricle. This is the first time that a clot from the ventricle has been removed, and I trust that this case may be a precursor for the relief of apoplexy.

Fracture of the base of the skull has been one of those injuries which the surgeon has treated purely upon the expectant plan, and with the conviction that death is sure to follow. This view of the lesion has been entertained for years by hospital surgeons, and there is certainly a consensus of opinion among surgical writers in regard to the prognosis. All standard text-books and monographs are in accord in reference to the mortality. During the past few years my attention has been especially directed to a study of these cases of basilar fracture, and I shall endeavor to demonstrate here that fractures of the base of the skull are amenable to surgical treatment. I shall also endeavor to point out the clinical fact that the great majority of these cases die from causes which can be wholly prevented by the surgeon. There has been but little encouragement to the surgeon to attempt any treatment in these cases of basilar fracture, when one reads in the latest edition of a large standard work on surgery, "that any treatment directed to the lesion itself is out of the question." I trust that I can demonstrate the incorrectness of this view, which represents the opinions of most surgical authors. This is not the time or the place to enter upon the discussion of the signs and symptoms of fracture of the base, which would require too great a digression from the title of the present paper.

With a view to simplifying the general subject of basilar fractures, I shall advance two propositions, and shall attempt to prove the correctness of these propositions:

First. That fractures of the base of the skull should be considered in the same category as compound fractures of the vertex of the skull or of the long bones.

Second. That since fractures of the base of the skull possess the same essential characteristics as other compound fractures, they should therefore be treated by the same exact principles of aseptic surgery.

Some surgeons may dissent from the first proposition, viz.: that a basilar fracture should be considered in the same light as a vertex fracture. It is evident, however, that every compound fracture has air admitted to the seat of the fracture, and that this is the case in fractures of the base of the skull. If the anterior fossa is the seat of lesion, air gains entrance to the fracture through the nasal cavities. If the middle and posterior fossæ are involved, air gains access either by the external auditory meatus, or by the Eustachian tube through the pharynx and nasal cavity. The entrance of air to the seat of fracture, which is a *sine qua non* for the existence of a compound fracture, is not the only point that basilar fractures possess in common with all other compound fractures. The basilar fracture is associated with hæmorrhage, laceration of nerves, venous thrombosis, septic phlebitis, fat embolism, cerebro-spinal shock, pyæmia, septicæmia, and abscesses; and, in fact, with all the complications that arise in connection with other compound fractures. Even the cerebral lesion is not confined to basilar fractures, because it occurs in fractures of the vertex. It is thus evident that fractures of the base do not differ in any essential particular. The view may be even advanced that the cerebral lesions in vertex fractures may be more severe than in basilar fractures, because in the latter the cerebro-spinal fluid, in a measure, protects the brain from concussion and thus diminishes the shock.

A discussion of the second proposition brings us to a consideration of the treatment of compound fractures in general. The technique is simple. Every patient suffering from fracture of the base, if the immediate shock is not too profound, should be removed to the operating-room. Every outside preparation having been made to make the toilet aseptic, the head should be held firmly and the entire scalp shaved, after which it should be thoroughly washed with soap and water, and then irrigated with a 1 to 500 bichloride of mercury solution. Attention should next be directed to the irrigation of the external auditory canal and the nasal cavities. Both of these should be rendered thoroughly aseptic, after which the ears should be packed with iodoform or bichloride gauze, and some absorbent cotton plugs placed in the nose. The air can filter through cotton, but microörganisms cannot pass through it. In irrigating the nasal fossæ the surgeon must exercise great care, lest the fluid enter the stomach and produce toxic effects. There remains now only one other possible channel of infection to the seat of fracture, and that is the Eustachian tube. This may carry sepsis to the interior of the cranial cavity in a fracture of the base. The arrangement of the ciliæ in the tube is such as to propel air and mucus *toward* the nasal cavity; but during the act of deglutition the current may be reversed, and infection thus reach the base of the brain. In the ordinary form of fracture of the base, where the membrana tympani is ruptured, the discharges make their exit through the auditory canal. In the exceptional cases where the membrane is not ruptured, the serum, blood, and cerebro-spinal fluid find their way into the nasal cavity and the pharynx, and thus these cases are most exposed to sepsis. If

the unruptured membrana tympani is examined in a basilar fracture, the membrane will be seen puffed out on account of the presence of fluid behind it, and the membrane will have lost its natural lustre. These are the circumstances under which it may be wise to puncture the membrana tympani, and thus allow the blood and the cerebro-spinal fluid to escape through the external auditory canal. The diversion of the discharges from the Eustachian tube into the ear makes it possible to keep the fluids permanently aseptic. Having now rendered the head and all the avenues of approach to the intracranial cavity surgically clean, it remains to apply a dressing that will keep these parts permanently free from any source of infection. This object is best accomplished by the use of a cap made of wet, loose bichloride gauze or carbolized wool, over which absorbent cotton and a plaster-of-Paris bandage are applied. The cap should completely surround the entire head, cover in the ears, and protect every channel leading down to, and communicating with, the seat of fracture. The cerebral viscera are thus protected from the entrance of septic germs. This same dressing should be made from time to time during the repair of the fracture, and under the same strict and rigid rules of antiseptic surgery.

The reasons for dressing fractures of the base of the skull with a scrupulous attention to the minutest detail in antiseptic surgery are at once obvious. If a patient survives the immediate shock of the fracture, and lives twenty-four hours, he is almost certain to die from causes which can be directly attributed to sepsis. Among these causes may be mentioned basilar meningitis, cerebral abscess, pyæmia, suppuration in the petrous portion of the temporal bone, septic phlebitis, encephalitis, leptomeningitis, and other complications due to infection.

If the surrounding parts and the discharges are kept aseptic then sepsis cannot occur, and this removes at once all the causes of death due to septopyæmia. I do not pretend to state that it is impossible for a patient with fracture of the base to die except from a cause due to sepsis; but I do state that nearly all these cases terminate fatally from causes which are due to sepsis. A reference to statistics will demonstrate that deaths occurring in fractures of the base of the skull, independent of shock or sepsis, are extremely rare, and that nearly all these cases die, therefore, from causes which can be prevented by the surgeon. I would go even further, and recommend that all cases of head injury with hæmorrhage from the ear, or from the nose, be treated with antiseptic precautions. I have seen many cases where a fracture of the base of the skull did not exist, but where a hæmorrhage was present from the ear or the nose, and in the course of ten days a fatal meningitis developed. Every practical surgeon can recall such cases as I have mentioned, and I believe that the meningitis has its origin in septic contamination of the hæmorrhagic or other discharges. The old and good rule in surgery, "Never to look lightly on any injury of the head, however trifling it may appear," is one that, if strictly observed, may be a means of saving life where otherwise that life may be sacrificed. During the past few years I have seen a large number of cases of basilar fractures. Most of these cases died from shock within twenty-four hours; but recently, I have had the satisfaction of seeing six cases recover under the plan of treatment just described. By placing basilar fractures in the same category as compound fractures, and treating them as such, there is a prospect of recovery in cases which have been hitherto considered fatal. If fractures of the base can be saved, it is another triumph of antiseptic surgery, which but recently was thought impossible. These six cases of fracture of the base are not included in the list of one thousand cases, as they have been separately published in the *Transactions of the New York Academy of Medicine*. If, however, these cases were introduced, under the same conditions as the other compound fractures, the mortality would be affected only in favor of its fractional diminution.

2. *Fat Embolism.*—This interesting complication was first fully described by Wagner and Zenker. Fat embolism means the entrance of fluid fat from the medulla of the bone into the veins in the immediate vicinity of the fracture, and through these channels into the capillaries of the brain, spinal cord, lungs, kidneys, and other essential organs. The presence of fluid fat in the blood was described in 1836 by Dr. R. W. Smith, but the clinical importance of this condition was not investigated until recently by Bergmann, Czerny, and Scriba. Dejerine has experimentally produced fat embolism in the lower animals by inserting laminaria-tents into the medullary cavity of the bone. The symptoms of fat embolism are present within the first three days as a rule, and resemble those of secondary shock. They occur before the time at which venous thrombosis or pulmonary embolism would be expected to appear. Great dyspnœa associated with the Cheyne-Stokes respiration, irregularity of the heart with a sudden rise of temperature, together with twitching of the muscles, as well as paralysis of certain muscles, have been observed in these cases. There have been no metastatic abscesses discovered where an autopsy has been made. I have found an abundance of fat globules following the train of symptoms just mentioned. This group of symptoms must not be mistaken for shock following fracture, nor for pulmonary embolism. Shock may

be said to be present *three hours* after the fracture, fat embolism *three days* after, and pulmonary embolism *three weeks* after. For convenience, I have arranged these complications in the order in which they are most likely to occur, and by associating these conditions, which simulate each other, with the time at which they appear, no mistake in diagnosis is likely to arise.

3. *Insanity following Fracture of the Skull.*—There have been a good many cases of insanity following traumatism of the head, and this is generally accepted by specialists in nervous diseases. I have at present under observation a case of insanity, one of imbecility, and one of idiocy, all resulting from traumatism of the skull; also a case in which there was severe and persistent headache, extending over a period of six years, in which I trephined over the site of a previous fracture, and found the dura thickened and the seat of a pachymeningitis. I removed the depressed bone, which relieved the intracranial pressure, and the patient has never had any return of the agonizing pain in her head, and her mental condition seems normal. In cases of traumatic epilepsy attended with more or less mental disturbance, I have used the trephine with most excellent results. I am aware that trephining is not uniformly successful in epilepsy, and my own experience has led me to expect little from the operation in those cases where there is not a well-marked depression produced by a fracture. There is a case reported by Dr. MacDonald, in which insanity followed a compound fracture of the skull, and also a case reported by Dr. Macewen, of Glasgow. Both of these patients recovered after trephining. Schroeter mentions a case where a patient became insane on account of a fracture of the skull. Dr. Spitzka gave me the notes of another patient who became insane after a depressed fracture of the skull produced by the explosion of a shell at the battle of Bull Run.

Many other cases might be found where the cause of insanity is due to an old and unrelieved depressed fracture. In all these cases depression existed, hence the importance of elevating at the time of the accident, even though no symptoms exist.

The kind of insanity which follows in these traumatic cases is that form which is attended with great irritability and mental excitement, and which is also accompanied by fits of violent temper and passion. These phenomena are suggestive in depressed fracture, and call for surgical interference in a class of cases where, until recently, no relief could be extended to the sufferers.

The part of the head injured seems to exert a causative influence upon the development of insanity. Dr. Garmany has pointed out the interesting clinical fact, that insanity follows in fifty per cent. of the cases of traumatic epilepsy where the injury involves the frontal or parietal regions. The same writer has also demonstrated that an irritative, rather than a destructive, lesion is the cause of insanity. As irritative lesions are largely due to the effects of traumatism, it follows that all cases of compound fractures of the skull should be treated by rendering the wound aseptic by operative interference, even in the absence of any symptoms.

The suggestion of enlarging the field of operative surgery of the skull, so as to trephine in cases where there are no symptoms, for the purpose of preventing insanity, may seem at first too radical. When, however, it is considered that the operation of trephining in this list is attended with a mortality of a fraction of one per cent., it seems justifiable in all cases to trephine in order to prevent insanity, if for no other reason. A still further extension of the field of operative surgery of the head has been recently made by Mr. Horsley to include trephining for the relief of general paresis. The object is to remove some of the arachnoid fluid, and thus relieve intra-cranial pressure. To what extent this operation will afford relief is at yet *sub judice*.

4. *Malignant Disease.*—The question of the development of malignant tumors at the seat of fracture is an exceedingly important one in surgical pathology. The late Dr. S. D. Gross pointed out the important fact, that almost half of the cases of malignant bone disease can be traced to traumatism. His valuable contribution upon this point is worthy of careful study. I have been able to verify in my own experience his conclusions.

I recently operated upon a child with an immense sarcoma upon the occiput. The child had sustained a heavy fall upon the back of the head six months previous, followed at once by the development of a large hæmatoma. The hæmatoma was not incised, and a linear fracture existed beneath it. For some weeks after the injury there was nothing special excepting the presence of the hæmatoma; but the tumor then began to grow very rapidly, and in less than six months from the receipt of the injury the sarcoma was much larger than the child's head. The patient died some weeks after an incomplete operation for its removal. I have many beautiful specimens illustrating the clinical fact that a fracture may be the starting-point of this variety of tumor.

The prognosis of sarcoma affecting bone as a result of fracture, while grave, is not necessarily fatal, provided the tumor is recognized before glandular swelling appears and the operation is performed early and includes the tissues far from the seat of disease. This subject of the influence of fracture upon the development of sarcoma is one on which no extensive investigation has as yet been made,

and it is one which offers a rich field for original research.

Epithelioma also may develop indirectly as a result of a compound fracture; but this malignant growth has its origin from the soft tissues in connection with a sinus leading down to necrosed bone. If a sinus is not healed it becomes lined with epithelium, and a discharge of ichorous pus through it from time to time sets up an irritation with a proliferation of epithelial cells, and epithelioma may in this way secondarily develop. While the epithelioma is not directly connected with the seat of fracture, as is the case in sarcoma, nevertheless, the disease may have its origin in conditions arising from sequestration in a compound fracture. The closure of sinuses in connection with necrosis following a fracture should always be aimed at by the surgeon.

5. *Tenotomy.*—Six years ago I called attention to this procedure in the treatment of compound fractures, and in a number of cases since then I have been impressed with the value of the operation in all oblique compound fractures. Tenotomy relieves at once any contraction of the muscles, permits the fragments to be placed in accurate coaptation, and secures physiological rest to the fracture. It affords also great comfort to the patient, and is a valuable means of fixation during the first ten days. Tenotomy may be employed upon the tendo-Achillis, upon the hamstring muscles, upon the tendons of the arm and forearm, and even upon the sterno-cleido-mastoid muscle in fractures of the clavicle. I believe there is much to be gained by the adoption of this simple procedure in overcoming muscular spasm in compound fractures of the extremities where there is difficulty in reduction, and I cannot too highly commend it as a means of overcoming the obstacles to the reduction of fractures. In several cases of compound fracture of the tibia, where the solution was parallel with the long axis of the bone, with considerable separation, I found that a horseshoe tourniquet was a most valuable instrument in closing the long fissure. The instrument by pressure overcomes the vertical separation, just as tenotomy by relaxation overcomes the oblique displacement. The pad can be applied upon one side of the bone and pressure be made by applying the other pad over a thick plaster bandage. The screw can be gradually tightened, and in a few days the bone can be approximated and the instrument discarded. This is a safe and more satisfactory instrument than the apparatus devised by Malgaigne. I have found that muscular spasms can in most cases be overcome by position. Relaxation of the muscles will always relieve the spasm. The use of sulphonal, as well as many other drugs, has been suggested, but I have never seen a case where relaxing the muscles did not relieve the condition.

6. *Healing by Schede's Methoa.*—In a number of severe cases of compound fractures of the leg and skull I have observed some beautiful illustrations of this newly described method of repair. It has usually been taught that blood-clots in wounds are obstacles to repair by primary intention, and that these clots act as foreign bodies. In one case of severe compound fracture there was great hæmorrhage between the fragments, and the large space between them was filled with fluid blood and clots. I divided the tendo-Achillis to overcome the contraction of the muscle, which permitted the fragments to be brought into perfect apposition. The wound was then dressed with the most rigid aseptic precaution, and the blood-clots became organized and furnished a most valuable medium of union. The fracture healed by primary intention, and the patient made an excellent recovery.

Fluid blood and clots, if perfectly aseptic, are valuable adjuncts to the repair of compound fractures. They are, however, most potent sources of evil if any infection reaches the clot through carelessness of the surgeon. It is a most valuable contribution to the treatment of compound fractures, if the blood which escapes between the ends of the fragments can be in the future utilized as a means of hastening and perfecting union by primary intention. The reason why so important a principle in surgical pathology has been so long unknown, is explained by the fact that blood-clots, until rigid asepsis was established, were recognized sources of septic inflammation. If all the surrounding parts in every compound fracture are made aseptic, clots and fluid blood can be utilized for the purpose of healing. Anything short of absolute surgical cleanliness will convert these clots and the blood into dangerous agents of infection.

7. *Amputation.*—Amputation of the limb in compound fracture was formerly resorted to with great frequency in hospital practice. Before the introduction of antiseptics, pyæmia destroyed the life of almost every patient suffering from compound fracture who was brought to a large metropolitan hospital. The time is within my own recollection when, in Bellevue Hospital, amputation was immediately performed as a routine treatment to prevent blood-poisoning, upon the admittance of a compound fracture; and this operation was considered by surgeons as offering to the patient the only chance of recovery. At the present time limbs are saved which would then have been sacrificed, and it is a rare event to witness an amputation in compound fracture. Extensive fracture of the bone with protrusion of the fragments through the soft structures would not now form an indication for

amputation, unless the soft structures were badly lacerated. Formerly the loss of a few inches of the bone called for primary amputation; but this no longer offers an indication, for the bones are brought together by silver wire, and though the limb may be shorter than its fellow, the member is still retained, and elevation of the shoe compensates for any slight irregularity in the gait. In one case which I treated, where four inches of the tibia were removed, the patient made an excellent recovery.

The limits to which amputation in compound fracture may be resorted to are exceedingly narrow and restricted, and this conspicuous clinical fact is one of the most notable steps in the advance of modern surgery. Another important point in reference to amputation in compound fracture is the proper line of treatment to be pursued up to the time of the operation. It often happens that a patient is suffering too profoundly from shock to make it expedient to amputate. In these cases great benefit is to be derived from deferring the amputation even many days, until the condition is such as to justify the operation. Formerly this could not be practised without subjecting the patient to a greater risk from septic infection than would be incurred by an amputation during shock. If the wound is at once made aseptic, and compresses be placed over the fracture to control the hæmorrhage, and these compresses do not extend higher than the wound itself, the amputation can be deferred. It is important that these compresses be applied only over the wound, and that no tourniquet or any other form of compression be applied to the limb in the continuity of the artery above the injured part, for if this is done, there is danger of gangrene in the flaps after the amputation. In one case gangrene followed an amputation of the leg where a tourniquet had been placed over the femoral artery. This patient was brought to the hospital from a neighboring town with a tourniquet upon the femoral artery for the purpose of arresting hæmorrhage in a compound fracture of the leg. There can of course be no blame attached to the hospital authorities for a mistake which occurred before the patient was received into the hospital, but I call attention to the case in order to emphasize forcibly this point.

8. *The Conversion of Simple Fractures into Compound or Complicated Fractures.*—By this is not meant the conversion of a simple into a compound fracture on account of the bone thrusting itself through the integument at the time of the accident. This may happen, especially when the muscular spasm is great, or during the transportation of a patient suffering from a simple fracture. What is meant, however, is the spontaneous conversion by means of the necrosis of a small fragment. An abscess subsequently forms and pus is set free, and the seat of fracture is exposed to the atmosphere. I have seen, for example, a Pott's fracture—that is to say, a fracture of the fibula three inches above the tip of the external malleolus, with a laceration of the deltoid ligament—converted after several weeks into a typical compound and complicated fracture, owing to the necrosis of the distal fragment. Suppurative arthritis of the ankle-joint ensued with caries of the astragalus. The ankle-joint was opened, the carious fragments removed, the joint freely irrigated, and an antiseptic dressing applied. The patient recovered in a few weeks with a useful joint. The possibility of nature transforming a simple fracture into a complicated one must not be overlooked. In such cases prompt surgical interference may arrest the progress of the disease, and effect perfect restoration of a joint, otherwise this complication leads to irreparable damage, if not to loss of life.

9. *Compound Fractures Involving Major Joints.*—The treatment of compound fractures involving major joints has been entirely revolutionized since the introduction of aseptic surgery. The criticism I would offer upon the general management of these cases, is, that too little conservatism of one kind, and too great radicalism of another kind, are simultaneously practised. The bad results in fracture-dislocations are due in a large measure to a want of rigid asepsis on the one hand, and a too extensive operative interference on the other. For example, the joint may not be rendered thoroughly aseptic at the beginning, but may be extensively interfered with as regards operative procedures.

In the one hundred and seventy-one compound fractures involving joints, recorded in my one thousand cases, the results as regards the usefulness of the joint have been in nearly all the cases perfect. To have a compound fracture-dislocation of the ankle-, knee-, elbow- or shoulder-joint, repair with complete restoration of function, is the aim of the surgeon. In one of my cases, the astragalus extruded from the joint and was re-inserted, and perfect movement of the joint followed. These ideal results are to be obtained only by the exercise of great care. In all fracture-dislocations the joint should be immediatly rendered absolutely aseptic by thorough irrigation. The drainage should be entirely across the joint, otherwise a pocket for the retention of inflammatory exudates is sure to form in the fold of the capsule. These products under certain conditions are sources of great danger. A careful study of cases of fracture-dislocation reveals the history of an abscess formation weeks after, upon the side of the joint opposite to the original wound. This complication, so often reported, is obviated by free drainage. It is not sufficient to drain one side only, and that side through the original opening into the joint; but the tube must pass entirely

through and across the joint. Physiological rest for many weeks must then be secured, and no passive motion employed for at least six weeks. Passive motion too early employed has often excited inflammation which has led to suppurative arthritis. Active motion must follow in its turn, but not for some time after the employment of the passive motion and massage. A proper sequence in the employment of these different agencies is most important in order to reach an ideal result.

The complete history of the one thousand cases of compound fractures I have here before me. Each case is given in full with the name of the patient, the date of his or her admittance to the hospital, the age, a description of the injury, the treatment in full, and the result, together with the name of the house-surgeon on duty at the time as a matter of reference. I have also most of the temperature charts, and in bottles the pieces of skull which have been preserved, and labelled to correspond to the cases given in the table.[1] It is obvious that time will not permit the detailing of these histories, and therefore I can only give a summary.

The general summary in the one thousand cases is as follows:

Skull	178
Nasal, malar, maxillæ and patellæ	89
Arm	40
Forearm	41
Fingers and toes	97
Ilium, clavicle	2
Thigh	87
Leg	295
Fractures involving shoulder-, elbow-, or wrist-joints as a result of disease or accident	39
Fractures involving hip-, knee-, or ankle-joints as a result of disease or accident	85
Fractures involving carpal or metacarpal, tarsal or metatarsal joints as a result of disease or accident	47
	1000

Now, following the example of surgical writers who have carefully tabulated the results of treatment in compound fractures, I shall eliminate all those cases in which primary amputations were performed, because they do not concern the point at issue; and I shall also, according to the practice of writers, reject all those cases which died of hæmorrhage, collapse, shock, etc., within forty-eight hours, although most of the cases died within a few hours after injury. I shall also leave out cases of compound fractures of the hand and foot, as too insignificant to be classed with compound fractures of the long bones or of the skull.

In the total of one thousand consecutive and, of course, unselected cases of compound fractures, produced by traumatism or by operation, there were 101 deaths, 60 primary amputations, and 4 cases where the results were unknown on account of the removal of the patients from the hospital, at their own request, immediately after their admittance. In the 101 deaths, 82 died within forty-eight hours after the accident and during shock, and consequently these deaths should not be included in any figures to ascertain the percentage of mortality, because the patients died before any plan of treatment could be adopted having reference to the repair of the fracture or to the prevention of septic infection.

The remaining nineteen deaths occurred from the following causes: One from tuberculous meningitis following some weeks after a resection of the hip-joint, so that this case died from other causes than septic infection; another from uræmia in chronic Bright's disease one week after wiring the patella. The wound was, however, healed and perfectly aseptic, so that this case died from other causes than septic infection. Another died one month after trephining, from exhaustion and inanition, with the wound perfectly healed by primary intention, and, as shown by the autopsy, with no evidences in the brain of the pathological changes of sepsis, so that death in this case cannot be attributed to septic infection. Two other cases died from irreparable damage to the brain, in one of which the lock of a gun was driven through the skull into the brain, and in the other a fracture at the base was found at the autopsy in addition to the fracture of the parietal bone, so that death in neither of these two cases was due to pyæmia or septicæmia. Four other cases died from cerebral softening, which was situated at a distance from the original wound.

In reference to these cases of cerebral softening following injuries, a word of explanation seems pertinent. The circumscribed areas of softening in every respect resembled the changes which are found after apoplexy. There was no local evidence of septic infection, and in all the four cases the autopsies were made by experienced pathologists. The situation of the softened areas at a point distant from the original wound, the changes, *i. e.*, hæmorrhage and softening, and the perfect aseptic and healed condition of the external wounds, indicate that these cases are not of septic origin from the wound, but that they are changes identical with those which are found in cases of cerebral apoplexy. The cerebral softening appears to be due to a molecular disintegration or laceration of brain tissue from traumatism, and this disturbance of the nutrition produces a metamorphosis and liquefaction. The external surface of the dura seems to possess power to prevent the entrance of septic microorganisms into the cerebral substance; while the

[1] Dr. Dennis exhibited some of the bones of the leg, thigh, arm, and forearm in which amputation was performed, also the pieces of bones from the joints, which pieces were removed by resection.

internal surface of the dura, owing to its proximity to the arachnoid space, is exceedingly delicate and affected by the slightest amount of septic material. Experimental work in this direction indicates that such points of softening may have their origin in traumatism, and are not necessarily due to sepsis. To convince myself further of the accuracy of this conclusion I trephined the skull of a dog, and planted upon its dura septic micrococci, which were furnished to me from cultures by Dr. Biggs. Though the microörganisms were septic, they were incapable of developing cerebral abscess through the dura or even producing a meningitis.

Such an experiment, while it is not conclusive, of course carries additional evidence in favor of the non-septic origin of such cerebral softenings, though they may be due to the presence of some such microorganism as the bacillus tuberculosis; but at the same time the traumatism may have acted as an exciting cause to develop an abscess in tissue already impregnated with pathogenic germs. This explanation places a higher value upon antiseptic surgery, and it also serves to illustrate that an operation like trephining may be a brilliant success, so far as the operation is concerned, but that the patient may perish from causes which are as yet beyond the complete control of the surgeon.

This is still an unoccupied field for investigation and research, and surgeons must turn the direction of their studies to those causes of death which are not connected with the details of antiseptic surgery. Perfection has been almost reached in the technique of the operation of trephining, but as yet there are circumstances which are not controlled by the practical surgeon, and in a study of these causes future scientific surgery must engage.

Returning again to the list of nineteen deaths after this brief digression, one case died from diphtheria after the external wound of the compound fracture had healed. The wound was aseptic and was never the seat of any disturbance, and as the diphtheria affected the larynx and trachea the cause of death was in no way connected with the fracture, although, of course, the time was too short to have the bone firmly united. One case of compound fracture of the skull died on the fifth day, but in this case the patient was suffering from a fracture of the spine which caused his death by myelitis. One case died within forty-eight hours after admittance, from cerebral abscess connected with a punctured fracture of the skull, which had been operated upon two weeks previous by a surgeon in a neighboring town. During the patient's sojourn in the hospital, he was trephined and seven ounces of pus were evacuated from the brain, but he died a few hours later. This case is excluded on the ground that the patient's injury was not treated in the hospital, and that he did not enter the hospital until within forty-eight hours of his death. The death was clearly due to sepsis, but the circumstances were such as to relieve the hospital surgeon from all responsibility.

One case died after forty-eight hours, but it was a case of primary amputation. The patient was run over by a locomotive; both feet were crushed and the hanging toes were removed as soon as his condition would permit. One case similar to the last died from a crushed foot ninety hours after the accident. The patient was over sixty years of age, and never reacted from the shock. The remaining case of death was due to leptomeningitis, which occurred fifty-two hours after trephining. This case was due to sepsis.

Finally, in order to arrive at the mortality in this list of one thousand compound fractures, there must be deducted from the original one thousand cases 60 primary amputations, because no treatment of the fracture itself was undertaken; 82 deaths from shock occurring within forty-eight hours, because no treatment was begun; 4 cases where the result is unknown because the patients left the hospital of their own accord; 155 cases of compound fractures of the fingers and toes, because they are too insignificant; also 18 cases just mentioned in detail. There then remain 681 cases of compound fractures with *one death due to sepsis*. This gives a death-rate of about one-seventh of one per cent. In order to appreciate fully what aseptic surgery has accomplished in reference to the management of compound fractures, it is necessary to compare the results obtained prior to the introduction of antiseptic surgery. In the Pennsylvania Hospital, Norris has made a statistical report of the compound fractures treated between the years 1839 and 1851. During that time there were 116 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation) with 51 deaths, thus giving a rate of mortality of forty-four per cent.

In the New York Hospital during the same period there were treated 126 cases of compound fractures of the leg and thigh (excluding those cases requiring amputation) with 61 deaths, giving a rate of mortality of forty-eight per cent. If a comparison is now made between the tables just mentioned and my list of one thousand cases, the mortality falls from forty-eight per cent. to a cipher. In the Obuchow Hospital Reports of St. Petersburgh there are 106 cases of compound fracture with a mortality of sixty-eight per cent. No particulars are given in this high death-rate.

In Guy's Hospital, from 1841 to 1861, there were reported 208 cases of compound fractures, with 56 deaths, giving a mortality of about 28 per cent. Billroth reports from the surgical clinics of Vienna

and Zurich 180 cases of compound fractures (excluding cases of amputation), with a mortality of 31 per cent. from septo-pyæmia. Now, after the introduction of antiseptics, a study of Billroth's table of compound fractures shows a reduction in the death-rate to about 3 per cent. The influence, therefore, of antiseptics has caused the death-rate to fall from 26 to 68 per cent. to about 3 per cent. In the present report of one thousand cases, if we compare the fractures of the extremities only, as has been done in all of the above tables, there is no death from septo-pyæmia, and thus the rate of mortality from blood poisoning is now reduced from 68 per cent. to a cipher. It may be said, therefore, that pyæmia and septicæmia, which formerly destroyed as many as 68 per cent. of compound fractures, have been practically eliminated. The science of surgery has at last demonstrated to the world that it has fairly met these demons of destruction, and that it has conquered them. Without doubt, the means of warfare have been found in the establishment of bacteriological laboratories, for without these institutions the great discoveries that affect the happiness and mortality of the human race could not have been made. For my own part, I remained a sceptic to the germ theory of inflammation until the Carnegie Laboratory afforded me an opportunity to work out my own salvation. The reduction of the death-rate from 68 per cent., which half a century ago was considered a brilliant achievement, and a result which was thought worthy of publication, to that of a cipher, represents what surgery has done for the amelioration of human suffering and the preservation of life. Humanity, indeed, owes a debt of gratitude to the science of surgery, which has annihilated pain and suffering, and has preserved and prolonged human life. To Pasteur and to Lister the profession are indebted for this great work—the former as the discoverer of the means, and the latter as the one who applied the discovery to surgery. Surely their names can never be disassociated with the march and progress of the grandest profession in the world.

HOSPITAL NOTES.

OPERATION FOR INGUINAL HERNIA IN A CHILD. THIERSCH'S METHOD OF SKIN-GRAFTING. STRICTURE OF THE URETHRA. FISTULA IN ANO. REMOVAL OF A FLOATING CARTILAGE FROM THE KNEE-JOINT.

Abstract of a Clinical Lecture delivered at the Roosevelt Hospital, New York.

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ATTENDING SURGEON.

Case I.—The first patient presented to the class was a little boy, who, at the time of his admission to the hospital, was reduced almost to a skeleton. Urination had been constant and painful. He was found to be suffering from a calculus, which was removed by suprapubic cystotomy. All the bladder symptoms were removed by this operation; but there was in addition an inguinal hernia induced by the calculus in the bladder. This was operated upon a week previously, and the sac found filled with such a large mass of intestine that reduction was accomplished with difficulty. It is not an easy matter to secure proper antisepsis in children on account of their restlessness, so that Dr. McBurney had been in the habit of dressing such cases with a plaster-of-Paris double-spica bandage; with this heavy dressing the child can be kept lying immovably on one side, so that the stream of urine is directed away from the wound. This was the method adopted in the present instance, and the patient's temperature only once reached 101° F., having been most of the time below 100° F. There have been no symptoms that would lead one to suppose that the wound had become infected. On removing the dressing, there was found some swelling of the testis, but the wound itself was in excellent condition with the exception of a drop or two of pus in the scrotal incision. The operator said that personally he had no objection to operating upon such young children, and that he had done so in a number of cases without the development of any unpleasant symptoms. The plaster-of-Paris bandage is no longer needed, and the subsequent dressings—consisting of powdered iodoform, iodoform gauze, rubber tissue, and a roller bandage—will be changed on alternate days. The little patient's general condition is remarkably improved.

Case II.—The next patient was a man who had received a slight injury to the knee, which was followed by a suppurative inflammation of the bursa, and extensive burrowing of pus. The suppurating sac had been opened and treated in the usual way, yet during two months of careful treatment, there had been no real attempt at repair, and large chronic ulcers remained. A week ago, he had been subjected to the operation of skin-grafting by Thiersch's method, which Dr. McBurney has frequently used, and considers much the best method. The grafts were obtained by shaving off with a very sharp razor, large thin sections of healthy skin from the thigh. The surfaces of the ulcers were excised, and, after controlling the hæmorrhage, the grafts were applied. They were covered with India-rubber tissue, and the dressings kept moist with salt solution. The surface from which the grafts were taken was simply dusted with iodoform and firmly bandaged. On removing the dressings, it was found that a small ulcer on the lower part of the leg presented only one minute point of granulation; a second ulcer in the middle of the leg, about three inches in diameter, which had been covered by two grafts, had cicatrized, and the same result had been attained in a still larger ulcer in front of the knee. On the latter ulcer were one or two dark points, showing where hæmorrhage occurred soon after the application of the grafts. These will probably slough. The most remarkable feature of this method is the rapid elevation of the surface after the application of the grafts. Those who saw the operation, recalled the fact that the ulcers had sharply cut edges, and seemed to be about one-sixth of an inch in depth, whereas they were now level with the surrounding surface. There is an entire absence

of any tendency to cicatricial contraction, and the tissue will remain as it is with the exception of a little thickening. By this simple operation, one week has sufficed nearly to heal the ulcers, whereas two months of previous treatment had accomplished nothing. In all probability the patient will be up and around in another week.

CASE III.—Dr. McBurney called attention to a complicated case of urethral stricture, which required very extensive cutting. He divided every stricture so that a No. 32 sound readily passed into the bladder. To guard against infection of the deeper part of the canal, he introduced, as was his custom, a drainage tube through the perineum into the bladder. The tube is usually removed in three or four days, but is at once re-inserted if there are fever, chill, or other symptoms indicating infection.

CASE IV.—A case of fistula in ano was then freely incised, the redundant skin removed, and the surface lightly touched with the Paquelin cautery. Dr. McBurney frequently makes use of the cautery in this way, and he thinks that more rapid granulation follows than can be obtained by any other method. For the first week after the operation, the wound is packed with iodoform gauze; but after this, the progress will be more rapid if balsam of Peru be substituted for the iodoform.

CASE V.—The next case was that of a man, twenty-four years of age, who presented an unusual history in that, up to about two months ago, he was not conscious of any difficulty with the knee. Even at this time, there was no marked interference with the functions of the joint, and it was only three weeks ago that he felt under the skin a small movable body. Since then, there have been occasional pain and interference with complete extension of the joint, and also a serous effusion into the joint. It looked like an ordinary case of mild serous synovitis, but further examination revealed the presence of a floating cartilage, being, in all probability, a portion of redundant synovial membrane separated from its attachment, in which a gradual deposit of calcareous material had taken place. A few months ago Dr. McBurney operated upon a case in which the cartilage was found in the process of formation and still attached. In some portions it was harder than in others, owing to the deposit of calcareous material which was taking place. A little later the cartilage would have been set free, and have given rise to further symptoms. It is remarkable that in the present case the cartilage should be free and yet give the patient so little trouble. The risk of removing such bodies under proper precautions is very slight; and if left alone, the joint will unquestionably suffer from their presence, rendering the patient predisposed to a chronic synovitis, and he may at any time be thrown down by the cartilage slipping in between the joint surfaces.

On the previous day the cartilage was found in the extreme lower and outer part of the synovial pouch, and now it is upon the inner side; but the presence of the fluid made the exact location difficult to determine.

After spending some time in ineffectual attempts at locating the body by palpation, an incision about one and one-half inches long and parallel to the axis of the limb, was made on the outer side of the knee, extending down to the synovial membrane, which was then opened. The body was very smooth and slipped from the grasp several times, but was finally removed from the lower part of the joint and found to be nearly circular, and measuring about three-quarters of an inch in diameter.

Dr. McBurney was of the opinion that the introduction into the joint of any foreign material, even an antiseptic fluid, was injudicious; therefore the cavity was not irrigated, but the wound in the synovial membrane was brought together with four sutures. The capsule was similarly treated, and the superficial tissues were united by a continuous catgut suture. A small rubber drainage-tube was introduced through the skin only. The external parts were then irrigated with corrosive sublimate solution (1 : 2500), the usual antiseptic dressing applied, and the limb bandaged from the toes upward. Immobilization was secured by two lateral wire splints, left in position for about two weeks.

Dr. McBurney said that he usually found it impossible from an examination of the specimen after its removal to determine its origin; but he thought it was only in very rare instances caused by a fracture. In the present case there was no history of traumatism, nor had there been in any case which he had seen.

MEDICAL PROGRESS.

The Uses of Ichthyol.—PROFESSOR NILS GADDE reports his results with the internal and external use of ichthyol in a number of different diseases (*Therapeutische Monatshefte*, March, 1890). With urticaria, both acute and chronic, the internal administration was of decided benefit. He has treated a number of cases of chronic alcoholism by the same means with success, tremor quite rapidly disappearing, appetite returning, and sleep becoming normal and undisturbed. In one case marked tremor disappeared in ten days. The depression and anxiety of chronic gastric catarrh were also much diminished by the drug.

In chronic rheumatism, either articular or muscular, the external and internal employment of ichthyol was followed by good results. The pain of arthritis deformans was also considerably diminished.

The author has administered the drug in cases of chronic nephritis and diabetes, but considers his observations too few to permit positive deductions. In one case of diabetes the sugar was reduced from six per cent. to one-half per cent. in about one month, but in connection with the administration of ichthyol the diet was regulated. The doses in which the drug was administered are not stated.

DR. FREUND, of Strassburg, employs ichthyol in the treatment of many diseases of the genito-urinary organs in women (*Berliner klinische Wochenschrift*, March 17, 1890), and advocates its use in chronic parametritis, chronic and subacute perimetritis with exudations or adhesions, inflammation of the ovaries and tubes, erosions of the cervix, and pruritus of the external genitals, in all of which diseases it has given the author suprisingly good results. He administers the drug internally in doses of 1½ grains three times daily at the beginning of treatment; later, this dose is doubled. For intra-vaginal use a mixture of ichthyol (sulph-ichthyolate of ammonium) 5 parts, glycerin 100 parts, is employed by saturating cotton tampons, which are introduced into

the vagina. In addition to this an ichthyol ointment (equal parts of ichthyol and lanolin) or soap (ichthyol 1 part, green soap 10 parts) may be rubbed into the abdominal walls with the view of hastening absorption, or the drug may also be used in enemata of olive oil or in suppositories.

Cervical erosions the author usually treats by painting with the pure ichthyol. For pruritus it may be used in the form of an ointment or a ten per cent. solution in water.

In all cases, according to Freund, the internal administration is followed by improvement in the general condition, the appetite increasing and the stools becoming more regular. In no case were disagreeable symptoms of any kind produced.

Treatment of Exophthalmic Goitre.—Professor Nothnagel states that digitalis and drugs with similar effects are entirely useless in Graves's disease. An effective agent against the palpitation is cold, in the form of an ice-bag applied either over the cardiac region or over the neck. The patients should live quietly, and avoid coffee, beer, tobacco, and mental and bodily excitement. Little or nothing is to be expected from medicinal remedies. According to the most recent observations, galvanism through the medulla oblongata and cervical sympathetic is the best treatment; but this treatment must be regular and long continued, and should be associated with a hydro-therapeutic course—the patient being systematically treated with tepid half-baths, irrigations, wrapping in moist linen cloths, and the cold spinal bag. By these means an improvement in the condition is in many cases brought about. Iron may be given if indicated; in other cases, when patients are much excited, bromide of sodium or potassium may be exhibited in doses of fifteen grains twice or thrice daily. An important means of treatment, but one that can only be carried out in the case of well-to-do patients, is to send them to mountain regions, especially to the higher altitudes.—*Practitioner*, March, 1890.

Orexin.—According to the *Therapeutische Monatshefte*, orexin hydrochlorate, the new stomachic, is quite soluble in warm water, is very irritating to the nasal mucous membrane, and when applied to the tongue has a bitter taste and causes a burning sensation.

Professor Penzoldt prescribes it in the form of pills, as follows:

℞.—Orexin hydrochlorate . . . 20 grains.
Extract of gentian } of each
Pulverized althæa } sufficient quantity.

Mix and divide into 20 pills, which should be gelatin-coated. Three to five pills may be taken once or twice daily, with a cup of broth.—*Medical Chronicle*, March, 1890.

The After-effects of Chloroform.—A new phase of the chloroform question is touched upon in a paper by Ostertag, published in the *Deutsche medizinal Zeitung*, January 16, 1890. In the literature of the fatal cases of the administration of chloroform as an anæsthetic a few are on record where death was only produced a number of hours after the production of the narcosis. Thus Langenbeck published, in 1850, a case of death after extirpation of the shoulder, which occurred seventeen hours after the operation. Berend also published cases in which death did not occur until sixty hours after the production of narcosis. Ungar and Strassmann called attention to the fact that chloroform inhalation in certain instances had produced fatty degeneration of internal organs, especially of the heart and liver, but without producing any detectable alteration in the blood. These results seem to have attracted but little notice, though it is evident that they should draw attention to a possible phase of chloroform death which is worthy of a careful study.

The author's experiments were made on rabbits, guinea-pigs, rats, cats, dogs, and pigeons, in all of which the prolonged administration of chloroform was followed by fatty degeneration of the heart and other organs, and by changes in the blood. He claims that it is quite conceivable that the preliminary stages of fatty degeneration, even although not having passed to a complete degeneration, may be concerned in the reduction of the functional activity of the heart. Fatty degeneration of the skeletal muscles, which was especially noted in the diaphragm, may likewise prove an important factor in the disturbance of respiration; while, of course, the depressing action on the respiratory centre is likewise of prime importance. Further than this, the interference with the respiration leads to the accumulation of carbon dioxide in the blood, and this may act as a depressant on the heart muscle.

The author formulates his conclusions as follows: 1. After prolonged inhalation of chloroform, fatty degeneration of different organs, especially of the heart, liver, skeletal muscles, kidneys, and stomach occurs in animals of widely different species. 2. The fatty degeneration is the result not only of the action on the blood and the structure of the red blood-corpuscles, but also of a direct local action on the tissue cells themselves. 3. Certain individuals show such great susceptibility to the action of chloroform by inhalation that they rapidly succumb to its influence. 4. The fatal after-effect of chloroform is attributable to paralysis of the heart, due to an anatomical degeneration of the myocardium, although in certain cases this may only with difficulty be detected, and to a gradual accumulation of carbon dioxide in the blood.—*Therapeutic Gazette*, March 15, 1890.

Prescription for Chilblains.—According to the *Monatshefte f. praktische Dermatologie* of March 15, 1890, Dr. Baelz uses the following as an application to chilblains and chapped hands:

℞.—Liquor potassa . . . ½ part.
Glycerin } of each . . . 20 parts.
Alcohol }
Water . . . . . 60 " —M.

To be used once daily after washing the hands in warm water. If desired, the mixture may be made more agreeable by the addition of a perfume.

Some Therapeutic Uses of Cannabis Indica.—In a short paper (*Lancet*, March 22, 1890) Dr. J. Russell Reynolds describes the conditions in which he has found cannabis Indica useful. In senile insomnia, where an

elderly person, probably with brain-softening, goes to bed, gets up again, thinks he has an appointment to keep, etc., and yet is quite rational during the day, Reynolds considers cannabis indica the most satisfactory of all drugs, and gives from one-fourth to one-third of a grain of the extract at bedtime. In such cases it has been useful for months, or even years, without increasing the dose. In melancholia it is of less service; in alcoholic delirium and in mania it is valueless. Neuralgia, even after it has existed for years, he has often seen relieved by the drug. In neuritis it is very valuable, but only as an adjunct to mercury, iodine, or other remedies. Many victims of migraine have kept the attacks in abeyance for years, by taking hemp when an attack threatens. In sciatica, and in myalgia wherever situated, it has proved of no value. The same may be said of its use in gastrodynia, enteralgia, tinnitus aurium, and the so-called hysterical pains. On the other hand, it has relieved the lightning pains of tabes, and the disorders of sensation so frequently found in gouty subjects.

In many cases of clonic spasms, whether epileptiform or choreiform, such as are seen from a variety of causes in children, Reynolds has successfully relied upon hemp alone; but in true epilepsy an extensive experience has shown him that it is absolutely useless. The author believes that there are many cases of so-called epilepsy in adults which are either eclamptic or due to gross lesions in the nerve centres, and in these Indian hemp is a most useful agent. In tonic spasm, such as torticollis, in writer's cramp, general chorea, paralysis agitans, the ataxic movements of spinal sclerosis, and in tetanus the remedy is of no benefit. It relieves some cases of spasmodic asthma, and is of great service in cases of simple spasmodic dysmenorrhœa.

Reynolds explains the toxic effects occasionally observed by the fact that the drug varies greatly in strength, and that there are individuals peculiarly susceptible to its action, as is observed with other agents. As a commencing dose for an adult he never exceeds one-fifth of a grain; or for a child, one-tenth of a grain. But by gradually increasing the dose, adults may take with impunity, and often with advantage, two, three, or even four grains at a dose.

The Danger of Iodides in Acute Nephritis.—PROFESSOR PRIMAVERA (*L'Abeille Médicale*) declares that it is dangerous to prescribe the iodide of potassium or sodium in acute nephritis. In support of this opinion, he cites the following, one of many similar cases he has seen:

A boy, fourteen years old, developed acute nephritis fifteen days after an attack of scarlatina. The urine was scanty and albuminous, and contained large quantities of hæmoglobin and numerous casts. A milk diet was prescribed, but no drugs. Some days later, after the albumin had greatly diminished, another physician prescribed iodide of sodium, which was immediately followed by an increase of the albumin and casts and the appearance of blood. The iodide was stopped and the albumin and blood rapidly diminished. On giving the iodide a second time the same symptoms were produced, and again disappeared when the drug was withdrawn.

Primavera is convinced that the iodides are dangerous in acute nephritis. They may be used in syphilitic nephritis, but even here must be carefully watched.

The Treatment of Gleet.—PROFESSOR FESSENDEN W. OTIS (*Physician and Surgeon*, March, 1890) writes as follows upon the treatment of gleet:

As large a sound as can be used without undue force having been passed, either Ultzmann's short silver catheter with slit openings, or an ordinary silk catheter *coudé* is introduced just beyond the compressor urethræ muscle so that the eye lies in the neck of the bladder, and as much fluid as can be comfortably borne by the patient (usually from eight to ten ounces) is injected into the bladder by means of a large hand syringe. The patient then empties the bladder in the natural manner, the catheter having been withdrawn, thus thoroughly washing the urethra from behind forward. That the catheter is in the correct position is known by the fact that, when the injection is made, the fluid does not flow outward along the sides of the catheter, as it would were it not prevented by the action of the compressor urethræ; nor, when the syringe is removed, does the fluid flow out through the catheter as it would if it were in the bladder—this being prevented by the sphincter internus. The internal sphincter is so weak, however, that it makes but little resistance to the entrance of the fluid into the bladder. The first injections are extremely weak, increasing in strength day by day as the dilatation progresses. On the first day after the passage of the sound (lubricated with glycerin), a solution, consisting of zinc sulphate, carbolic acid, and alum, of each 1 part, water 2000 parts, is injected. On the second day, the strength of this is increased by reducing the water to 1500 parts, on the third day to 1000 parts, and, on the fourth day, to 500 parts. On the fifth day a change is made to a solution of the permanganate of potassium, 1 to 2000 of water; on the sixth day, 1 to 1500; on the seventh, 1 to 1000, when the solution is changed to the nitrate of silver, 1 to 1000, which is gradually increased in strength to 1 to 100. If the discharge still continues after the silver solutions have been used, they should be supplemented every three or four days by the injection of a few drops of a 5 per cent. solution of silver nitrate into the deep urethra by means of the drop-syringe. After a time it will be found that the large injections, if they have not cured the discharge, will cease to act beneficially and become irritating; they should then be stopped and the applications with the drop catheter alone relied upon, the dilatation being continued.

Laryngeal Tuberculosis as a Cause of Globus Hystericus.—LANGREUTER (*Centralblatt für Nervenheilkunde*) reports the case of a laboring woman, forty-four years of age, who was admitted to hospital with the typical symptoms of hysteria, functional paresis of lower extremities, paræsthesia, sensation of fulness in head, etc. The patient repeatedly said that there was a foreign body in the throat, made efforts to expel it, and signified that it should be removed. Her manner was so hysterical that organic disease was not suspected, but on the fourteenth day after admission she died. At the autopsy extensive tubercular deposits were found in the larynx, though the lungs and other organs were normal.

Langreuter thinks that such cases should always be borne in mind in making a diagnosis when there are hysterical laryngeal symptoms.—*Centralblatt für klinische Medicin*, March 22, 1890.

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RETENTION OF URINE.

THE profound pathological effect of retention upon the urinary organs is so well formulated from a clinical standpoint, and the *rationale* of the process thus originated has been so carefully elaborated, that further investigation upon this subject, even from the point of view of the experimental therapeutist, would apparently give little promise of fruitful result. Yet GUYON (*Annal des Mal. des Org. Génito-urin.*, March, 1890) has by a series of experiments so controlled the observations of the clinicians that he has materially added to an exact knowledge concerning the secondary effects of obstruction to the outward flow of the urine from the bladder.

Though it is not always stated in surgical textbooks, still it has long been observed that retention of urine, no matter what its cause may be or the length of time it has continued, is not accompanied by fever unless a septic element is introduced. When the urine contains no microörganisms, as determined by culture-experiments there is no elevation of temperature. These observations were confirmed by observing animals, the urethræ of which had been ligated. Hyperpyrexia was observed only in those animals whose bladders had been infected before ligation.

All cases of retention, both complete and incomplete, are characterized by polyuria, though this is especially marked where the condition is partial and chronic. Experiments fully verify this observation. Congestion of the entire urinary apparatus is another consequence of retention; if this be acute and prolonged, a brown or even red coloration of the urine, from admixture with blood, is not rare. As a result of this congestion, if, in chronic retention accompanied by cystic distention the bladder be completely and rapidly evacuated of its contents, a hæmaturia nearly always results. In acute retention the prostate and kidneys have both been observed to diminish in size when the bladder was emptied, and many cases of hæmaturia have been immediately cured of this complication by simply drawing off the retained urine. In animals Guyon has observed this congestion, involving not only the kidneys and the prostate gland, but also the renal pelves, the ureters, and the bladder. In the bladder and kidneys there is not only blood-stasis but interstitial hæmorrhages are found. As a result of this the bladder epithelium is detached in places, thus exposing areas fitted for rapid absorption; the gorged vessels form a conspicuous scarlet network, ecchymotic plaques are distributed irregularly over the inner aspect of the organ, and the urine contains blood. The kidneys are a sixth larger than normal, the extravasated blood percolates between the tubes and penetrates into their interior, causing a mechanical destruction of their epithelium, and hence the appearance in the urine of blood and epithelial tube-casts. In chronic retention of long duration dilatation of the canaliculi is observed, with flattening and granular degeneration of the epithelium.

The polyuria accompanying and dependent upon retention is not excited by the distention of the bladder; since, if this organ is subject to excessive tension there is a lessening of urinary secretion with diminution of urea, especially in that part of the water taken from the ureters, provided the flow of urine is not obstructed. In the normal condition of the parts the constant flow of the urine through the ureters provides a protective irrigation against septic inoculation of the kidneys, even though the bladder be infected. In retention, if prolonged, this flow is first diminished, then entirely suppressed. The chemical difference in composition between the urine of the bladder and that of the ureters, together with the fact that in the vesical hæmaturia of prolonged retention the water of the ureters is free from blood, shows that the bladder urine does

not pass backward into the ureters. Nevertheless minute particles of inert substances, such as charcoal, can ascend to the pelvis of the kidney when a continued flow from the ureters is interrupted, though these inert particles pass upward very slowly and do not penetrate beyond the renal pelvis. Microörganisms, however, reach the kidney quickly, and penetrate to all parts of the organ. The urinary stasis is complete in proportion to the amount of distention-atony from which the bladder and ureter suffer. The bladder loses its muscular power somewhat earlier than the ureter. If the retention has lasted not longer than twenty-four hours, the ureteral contractility may be restored by the evacuation of a portion of the bladder contents or by electrization, to be followed shortly by returning power of the cystic muscles. A more prolonged dilatation produces atony which cannot be remedied. The practical deductions from these experimental confirmations of clinical fact are: the importance of promptly relieving an over-full bladder, and the extreme care necessary as to the asepsis of all instruments used for the relief of either acute or chronic retention.

TARIFF ON BOOKS.

IT is with great pleasure that we notice that books and pamphlets printed in languages other than English are placed upon the free list in the new Tariff Bill, and we sincerely trust that many of our subscribers will be sufficiently interested in the matter to write to Chairman McKinley commending his action in this matter, and also to their representatives and senators urging that the clause making these books free shall be permitted to become a law. At the present time, owing to the craze for taxing not only proper substances but those things which by their free importation would improve the mental condition of the population of the United States, medical men are unable to receive even a pamphlet in the German or French language without having to pay a small, but nevertheless annoying, custom fee. These amounts are so small that even in the aggregate they can be of but little advantage to the Government; while, on the other hand, to an individual whose funds are limited the constant addition of 25 or 40 cents, or perhaps a dollar, to the value of a European work readily prevents a general purchase of the standard medical publications of firms upon the Continent. It does not protect American industries, because no American publisher would ever think of reprinting a book in a foreign tongue, and even if he prints a translation the purchaser of the German copy would probably be glad enough to buy the English version. Fortunately, there is little doubt that the clause we mention will pass the "House," and that these books will be given a free entry, not because the national legislators take enough interest in such matters to push the law through, but rather because they do not care to deal with what to them seems so small and unimportant a matter.

REVIEWS.

A GERMAN-ENGLISH DICTIONARY OF MEDICAL TERMS. By FREDERICK TREVES, F.R.C.S. Eng., and HUGO LANG, B.A. 12mo., pp. 402. Philadelphia: P. Blakiston, Son & Co., 1890.

For years English and American students have keenly felt the need of a complete German-English medical dictionary. Cutter's dictionary, good ten years ago, is now extremely unsatisfactory. Billings's "National Medical Dictionary" is beyond the reach of many a purse. Adler and Grieb are very imperfect in medical terms and definitions. For these reasons, we have examined the work before us with great interest. After careful comparisons with the above-mentioned lexicons, and, after using it constantly for a brief period, we feel fully justified in saying that it is surprisingly satisfactory and complete.

The care and thoroughness with which it has been prepared, is shown by the fact, as stated in the preface, that over one hundred and fifty German volumes were perused from beginning to end, and all medical words extracted and provided with an English equivalent—a labor covering a period of five years. The authors estimate that the work contains about 16,000 words which are not to be found in any German-English dictionary. Much space has been saved by omitting words the definition of which is obvious, such as *patellarreflex*, *nephrektomie*, etc., and by the judicious separation of compound words.

We most heartily commend the volume to all students of German medicine, and doubt not that in a very short time it will be on the table of every one.

PRINCIPLES AND PRACTICE OF SURGERY, BEING A TREATISE ON SURGICAL DISEASES AND INJURIES. By D. HAYES AGNEW, M.D., LL.D. Profusely illustrated. Second edition, thoroughly revised and with additions. Three volumes. Philadelphia: J. B. Lippincott Company, 1889.

To attempt to give anything more than a book notice of the second edition of a Surgery which is one of the monuments of American medicine would be absurd, unless many pages of this journal were devoted to the consideration and criticisms of the statements made by its distinguished author. It is but a few years since the first edition was completed in its third volume and placed before the profession, and we are glad to find that the

teachings of Dr. Agnew have not only been gladly received by the students whom he has taught, but by his professional brethren all over the world. In the present edition, conservative notice is taken of the rapid advances which have been made in the practice of surgery since the first edition appeared, and while several things have been omitted which we think should have found a place, we cannot but recognize that the book before us is intended as a trustworthy and absolutely reliable guide to the surgeon or physician wherever he may be in practice, and that it is not designed to bring before him the latest fad or untried operation.

The important subject of antisepsis, which was, comparatively speaking, in its infancy at the time that the first edition appeared, has of course received proper attention; but we feel sure there can be little doubt that the statistics, which are given in various portions of the work would be very considerably modified if they were divided into parts in which cases were treated with and without antiseptic precautions. These are the most notable changes which have been made by the author, and we feel confident that with them the work will go on to a still more successful career, and Dr. Agnew may rest assured that he has placed a stamp upon the history of American medicine which many years cannot efface.

CORRESPONDENCE.

NEW YORK.

To the Editor of THE MEDICAL NEWS.

SIR: The increasing interest that is shown in all matters pertaining to preventive medicine, both by the medical profession and by our civil authorities, is full of good omen; and the efforts now being put forth in this direction must surely bear good fruit in the near future. Our Health Board has been remarkably active in the enforcement of the law regulating vaccination. The law is not a new one, but for a number of years its provisions have been carried out in such an indifferent manner that many of our citizens are greatly surprised at what they are pleased to style "the new rule made in the schools." But even now there is no attempt made to determine whether the school-children are properly *protected* by vaccination, the fact of their being vaccinated at some time, no matter how remote, being accepted as a compliance with the requirements of the law. I do not mean to speak disparagingly of the Board of Health, for it has arisen from its former condition of "innocuous desuetude," and seems to be honestly striving to secure that hearty coöperation of the medical profession which is necessary to carry out properly its important and legitimate work. Attention has already been called to the fact that our people are almost panic-stricken when they hear of the possibility of typhus fever, smallpox, or cholera getting a foothold here; but they look with an apathy born of long familiarity with its horrors, and a mistaken notion of its nature, upon the constant ravages of diphtheria. This disease yearly counts among its victims more than many an epidemic of cholera. Great praise is due our health authorities, who have undertaken the difficult task of staying the march of this dread enemy. They have issued an order to the dispensaries requiring persons who come to these places, and are found to be suffering from diphtheria, to be detained and quarantined until the Board of Health can remove them to the hospital. It will be no easy matter to make the people believe that this is a beneficent measure, and that a due regard for the safety of all, demands that it shall be rigidly enforced. To those who have seen a tenement-house "wake," there is no mystery about the spread of contagious diseases; and the difficulties in the way of enforcing the law requiring private funerals in such cases can be easily imagined. The health inspectors have met with violent opposition in endeavoring to perform this duty; and he would, indeed, be rash who would venture, single-handed and unprotected, upon such a mission. Some of your readers may remember the experience of a poor man who, in his anxiety to avoid carrying diphtheria to his own home, dared to refuse "to kiss the corpse." He was seized by the excited people at the "wake," and but for timely aid would have been thrown out of a window.

The Pædiatric Section of the Academy of Medicine has devoted part of an evening to the discussion of the prophylaxis of diphtheria, with reference to the physician as a means of carrying contagion, and to the means to be employed for the better protection of nurses and others exposed to the disease.

Dr. W. P. Northrup thought that in addition to the usual precautions to secure cleanliness and disinfection of the person of the physician, he should remove his coat before entering the sick-chamber and wrap himself in a sheet. Dr. A. Caillé believed most thoroughly in the efficacy of systematic and thorough irrigation and disinfection of the oral and nasal cavities, not only of the patients but of those exposed to the disease. Dr. W. H. Thomson felt sure that the physician was rarely the carrier of contagion, and he asked in vain for the members of the Section to produce any well-authenticated case. While it is probable that the disease is not very frequently carried from one patient to another in this manner, those who have seen physicians visit such cases and then continue on their way without even taking the precaution to wash their hands, naturally ask themselves, By what good fortune do these physicians and their patients escape?

A great change has come over the opinions of medical men on the subject of heart disease. The student of a few years ago was confused by descriptions of various murmurs, their supposed origin, and their significance; and he often emerged from this labyrinth with the general notion that a murmur and heart disease were almost synonymous, and that the treatment could be summed up in the words "rest and digitalis." It was therefore gratifying, in a discussion at the Academy of Medicine on the therapeutics of heart disease, to see that a much more comprehensive view was taken of the subject, and that, as the President, Dr. Loomis, aptly remarked, "We have left the discussion of valvular diseases, and have grouped them according to the condition of the heart muscle, regarding that as the great factor in our study and treatment."

The discussion was directed more particularly to the consideration of the mechanical and dietetic treatment of heart disease.

Dr. H. N. Heineman said that the mechanical treatment, although not original with Oertel, had been placed by him upon a sound scientific basis. The proper ex-

ercise of a muscle led to its hypertrophy; and even muscular fibres which had undergone partial fatty degeneration, would improve and some of its fibres might ultimately hypertrophy, and by their proliferation overcome the degeneration which had taken place.

Dr. W. H. Thomson thought that we should not lose sight of the vital importance of oxygen to a muscle. Throughout the whole animal kingdom muscular power was found to be dependent upon the activity of respiration. This was particularly noticeable in the insect tribe, where the muscular power was phenomenally greater than that of any other class of living creatures. The muscle cell, unlike the nerve cell, used oxygen as its chief stimulant, and almost as its food. We had learned that animal heat came from the muscular tissue, independently of its contraction; and experiments had shown that the blood coming from a muscle by its vein, was more venous than the blood in the right side of the heart, and that more carbonic acid was generated by muscle than by any other tissue, which was another proof that the muscles used a great deal more oxygen. From these facts it followed that in the presence of muscular degeneration, a free supply of oxygen was urgently indicated, and this could best be obtained by giving iron, and securing for the patient an out-door life. He did not recommend muscular exercise *per se*. There was nothing better for these patients than camping out; and it was worthy of remark that the nomad races suffered the least from heart disease. Oxygen dilated the capillaries, and lowered arterial tension; and by eliminating the nitrogenous element as far as possible from the diet, the kidneys were relieved of much work and the vascular tension still further diminished. Therefore, in fatty degeneration of the heart, fresh air and a liberal diet of fermented milk were the most important elements in its successful treatment. There was a practical unanimity throughout the discussion as to the importance of diet and exercise in the treatment of heart disease, and drugs were relegated to a very subordinate position.

The usual routine of medical meetings was somewhat broken at a recent meeting of the New York County Medical Society, as it was found necessary to prefer charges against two of the members who had been guilty of flagrant violations of the code of ethics. The censors received information from the Medical Society of the County of Erie that one of these offenders was engaged in extensively advertising a patent medicine business. The evidence proved to be satisfactory, and he was expelled by a unanimous vote. The other member had not only been guilty of repeatedly advertising himself in the daily papers as a specialist, but conclusive evidence was furnished of his practising under an assumed name. After hearing the charges in detail, the Society unhesitatingly and unanimously voted to expel him.

On the evening of February 27th, the Alumni of the University of the City of New York held their annual dinner at Delmonico's, and the attendance was unusually large.

Dr. C. B. Kelsey, as is well known, was at one time a strong advocate of the treatment of hæmorrhoids by the injection of carbolic acid, but he has experienced a most decided change of faith on this point. At a meeting of the Society of the Alumni of Bellevue Hospital, he said that it had been the cause, on more than one occasion, of his eating "humble pie." When his article on the treatment of two hundred consecutive cases by this method without a mishap was still in press, he met with his first unfortunate case. The operation, he said, was sometimes followed by an unusually large slough, or by a periproctitis, or an ischio-rectal abscess. Whenever an irritating fluid was injected into a vascular tumor, one was unable to limit its irritant action, and bad results might follow either a weak or a strong solution. He had seen profuse and dangerous hæmorrhage follow the injection of a ten per cent. solution of carbolic acid into a hæmorrhoid, owing to the slough opening into a vein. But the most serious objection to the employment of this method was that the results were not permanent, and, after a period of two or three years, the hæmorrhoids were pretty sure to return. The method should be unequivocally condemned. He considered the operation, *par excellence*, for the relief of hæmorrhoids, was the clamp and cautery operation recommended by Mr. Smith, of London.

LONDON.

The Gulstonian Lectures. The New University of London Scheme. The Royal Medical and Chirurgical Society.

To the Editor of THE MEDICAL NEWS,

SIR: The annual Gulstonian lectures fell this year to the lot of Dr. G. N. Pitt, of Guy's Hospital, who took cerebral lesions for his subject and devoted his first lecture to the consideration of a series of fatal cases of ear disease. The records of his hospital during the last twenty years furnished him with fifty-seven cases, thirty-four being males, and two-thirds of the entire number were under twenty years of age. The two chief causes of death were abscess of the brain and thrombosis of the lateral sinus with subsequent pyæmia. Of cerebral abscess, there were eighteen cases, equally divided between the two sides of the brain. He found that abscesses in the temporo-sphenoidal lobe, which was by far the most common situation, were often associated with an inflamed or sloughing dura over the anterior surface of the petrous bone, or with a collection of pus beneath it; other complications were infrequent except meningitis, which was generally due to the extension or rupture of the abscess. The abscesses were almost always situated very close to the roof of the tympanum. A foul discharge was often a source of danger, and frequently, if not invariably, the spread of the mischief was due to imperfect drainage of the middle ear. Mastoid suppuration often involved the posterior surface of the petrous bone, but might be associated with disease limited to the middle fossa of the skull. His conclusions in regard to other points were, that cerebral abscesses occurred only when the otorrhœa had lasted for years or months; that the symptoms usually came on insidiously; that rigors, pyrexia, and optic neuritis were infrequent in uncomplicated cases, but that they all occurred occasionally; that a headache of intense severity and a dull, sluggish mental state were the two most characteristic symptoms; and that cerebellar abscesses were less common and were probably associated with disease of the dura mater behind the petrous bone, or with thrombosis of the sinus. Of thrombosis

of the lateral sinus, he had had twenty-two cases; in some, but not all of these, there was well-marked phlebitis; in considerably more than one-half the thrombus was suppurating, but pyæmia existed in several cases in which no suppuration had taken place in the thrombus. His conclusions were as follows: 1. The disease more often spreads from the posterior wall of the middle ear than from the mastoid cells. 2. The otorrhœa is generally, but not always, of long standing. 3. The onset is sudden, the chief symptoms being pyrexia, rigors, pain in the occipital region and in the neck, associated with a septicæmic condition. 4. Well-marked optic neuritis may be present. 5. The appearance of acute local pulmonary mischief, or of distant suppuration, is almost conclusive of thrombosis. 6. The average duration is about three weeks, and death is generally due to pulmonary pyæmic abscesses.

The following very interesting and remarkable case of recovery after thrombosis of the lateral sinus was narrated: A boy, ten years of age, who had had otorrhœa for years, was admitted with a temperature of 102° F., earache, tenderness, and œdema; a week later he had a rigor and developed optic neuritis on the right side. The mastoid was explored without result. The rigors and pyrexia continued, and two days later the lateral sinus was explored, a mass of foul clot was removed from it and the jugular vein tied, the boy making an uninterrupted and permanent recovery.

With the exception of the University of London scheme, there is nothing much of interest going on in the medico-political world, nor, as far as I can make out, is any very great progress being made toward providing a reasonably accessible degree for London medical students. The scheme which the Senate put forth has met with almost universal condemnation, particularly in several important particulars, and it seems quite possible that the difficulties of reconciling the conflicting and opposing interests of the various bodies concerned will be found to be insuperable. The subject is engaging the attention of a committee of the College of Physicians and Surgeons, and it may be hoped that before long the result of their deliberations will be made public, but when all the teaching and licensing bodies have succeeded in agreeing there will still remain the formidable opposition of the Scotch and other universities, who are so largely benefited by the inaccessibility of the existing London degree.

The Royal Medical and Chirurgical Society has at last settled down in its new home in Hanover Square, and is indisputably in possession of most suitable premises. The alterations necessary to accommodate the very large library owned by the Society, and to provide a suitable debating room, have been completed, and the Fellows of the Society are once more able to use the library. The meeting-room, which has been built on what was formerly the garden, will hold two hundred people without inconvenience, and more, if necessary, though it is hardly likely that the number at any of our numerous medical society meetings will ever reach, much less exceed, that figure. The Clinical, Pathological, Obstetrical, and British Gynecological Societies will also be housed under the same roof, and perhaps some other scientific, but not professional, societies also.

THE EFFECT OF HEAT UPON THE RED CORPUSCLES.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue to-day it is stated, in an editorial upon "The Effect of Heat upon the Red Corpuscles," that the changes produced are very similar to the hæmatozöon malariæ. Doubtless they are to any one unfamiliar with that organism. The changes of which you speak are perfectly well recognized, and are seen every day by men who use Ehrlich's methods, or who watch continuously the behavior of corpuscles in the warm stage. Even without this apparatus the deformations, chain-like bodies, undulating flagella, etc., can be studied with an immersion glass on a blood-slide surrounded with paraffin and kept warm for twenty-four hours.

Only a tyro could confuse these with any known pathological alterations, and to speak of them as "singularly like" the remarkable series of forms characteristic of, and peculiar to, malaria indicates an absence of practical knowledge of the now well-known blood-changes in this disease. Very truly yours,

WILLIAM OSLER, M.D.

BALTIMORE, April 12, 1890.

THE INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE MEDICAL NEWS,

SIR: In a letter dated Berlin, Karlstrasse 19, March 22d, Dr. Lassar, the Secretary-General of the Tenth International Congress, directs me to inform the medical profession of America that a programme of the Congress and other communications will be distributed two months before the meeting amongst *those who will have registered previously and received their tickets of membership.*

The latter can be obtained by sending application and five dollars to Dr. Bartels, Leipzigerstrasse 75, Berlin, S. W. By so doing the members will save much crowding and time during the first days of the Congress.

For the American Committee of the Tenth International Medical Congress, A. JACOBI, M.D.

OBITUARY.

DR. HENRY HOLLINGSWORTH SMITH died on Friday, April 11th, of pneumonia, after ten days' illness. Dr. Smith was born in Philadelphia, December 10, 1815, and was the son of James S. Smith, a distinguished lawyer. He received his medical education in the University of Pennsylvania, from which he was graduated in 1837.

He was resident surgeon in the Pennsylvania Hospital for two years, and in 1839 visited the London, Paris, and Vienna hospitals, where he spent eighteen months in study. On his return he began practice, and gave instruction in surgery to private classes. In 1849 he became surgeon to St. Joseph's Hospital, soon afterward surgeon to the Episcopal Hospital, and in 1854 surgeon to the Philadelphia Hospital. Between 1855 and 1871 he was Professor of Surgery in the medical department of the University of Pennsylvania, and in the latter year became Professor Emeritus.

When the war of the Rebellion broke out he was made Surgeon-General of Pennsylvania, and organized the

hospital department of this State. At the first battle of Winchester, Va., he originated the plan of removing the wounded to the large hospitals in Philadelphia and other cities, and established the custom of embalming the dead on the battle-field. He also organized and directed a corps of surgeons with steamers as floating hospitals at the siege of Yorktown, and served the wounded after the battles of Williamsburg, West Point, Fair Oaks, Cold Harbor, and Antietam. In 1862, after thoroughly organizing the department of which he was in charge, he resigned his commission, and had since been actively engaged in the practice of his profession. He was for three terms President of the County Medical Society, and at the International Medical Congress of 1887 he was Chairman of the Executive Committee.

Dr. Smith contributed largely to medical literature. Among his works were the following: *An Anatomical Atlas*, to illustrate William E. Horner's *Special Anatomy* (Philadelphia, 1843); *Minor Surgery* (1846); *System of Operative Surgery, with a Biographical Index to the Writings and Operations of American Surgeons for 234 Years* (2 vols., 1852); *The Treatment of Ununited Fractures by Means of Artificial Limbs* (1855); *Professional Visit to London and Paris* (1855); *Practice of Surgery* (2 vols., 1857–63), and numerous surgical articles in medical journals. He translated from the French *Civiale's Treatise on the Medical and Prophylactic Treatment of Stone and Gravel* (Philadelphia, 1841), and edited the *United States Dissector* (1844).

In October, 1843, he married Mary Edmunds, oldest daughter of Professor William E. Horner. A widow and three children survive him.

NEWS ITEMS.

Medical Examining Boards of Florida.—It is said that one of the medical examining boards of Florida recently rejected 35 per cent. of the applicants desirous of practising medicine in the State; a general average of 80 or more being required.

The Sims Monument.—It is stated that the committee in charge of the J. Marion Sims Fund have closed a contract with a German firm for a full-length bronze figure of the celebrated American gynecologist. The statue will be completed within a year, and, it is thought, will be placed in Central Park, New York.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM APRIL 8 TO APRIL 14, 1890.

By direction of the Secretary of War, PAUL R. BROWN, *Captain and Assistant Surgeon*, now at the Army and Navy General Hospital, Hot Springs, Arkansas, is relieved from station at Fort Thomas, Arizona, and will report in person to the commanding officer Little Rock Barracks, Arkansas, for duty at that post, reporting by letter to the commanding general Department of the Missouri.—Par. 3, *S. O. 84, A. G. O.*, April 10, 1890.

By direction of the Secretary of War, leave of absence for two months, on surgeon's certificate of disability, is granted JOSEPH C. BAILY, *Lieutenant-Colonel and Assistant Medical Purveyor*, with authority for his admission to the Army and Navy General Hospital, Hot Springs, Arkansas, for treatment therein.—Par. 10, *S. O. 85, A. G. O.*, April 11, 1890.

By direction of the Secretary of War, the following changes of stations of officers of the Medical Department are ordered:

LAUDERDALE, JOHN V., *Major and Surgeon.*—From Fort Davis, Texas, to Fort Ontario, New York.

SKINNER, JOHN O., *Captain and Assistant Surgeon.*—From Fort Ontario, New York, to Fort Davis, Texas.

PERLEY, H. O., *Captain and Assistant Surgeon.*—From Fort Wayne, Michigan, to Fort Mason, California.

BURTON, H. G., *Captain and Assistant Surgeon.*—From David's Island, New York, to Vancouver Barracks, Washington Ty.

HOPKINS, WILLIAM E., *Captain and Assistant Surgeon.*—From Fort Mason, California, to Fort Columbus, New York Harbor.

STEPHENSON, WILLIAM, *Captain and Assistant Surgeon.*—From Fort Verde, Arizona Territory, to David's Island, New York.

WILLCOX, CHARLES, *First Lieutenant and Assistant Surgeon.*—From Fort Columbus, New York Harbor, to Fort Bowie, Arizona Territory.—Par. 2, *S. O. 83, A. G. O., Washington, D. C.*, April 9, 1890.

By direction of the Secretary of War, the leave of absence granted NATHAN S. JARVIS, *First Lieutenant and Assistant Surgeon*, in S. O. 34, March 20, 1890, Department of the Missouri, is extended fifteen days.—Par. 22, *S. O. 81, Headquarters of the Army, A. G. O.*, April 7, 1890.

By direction of the Secretary of War, MARSHALL W. WOOD, *Captain and Assistant Surgeon*, is relieved from duty at Fort Randall, South Dakota, and will report in person to the commanding officer Fort Meade, South Dakota, for duty at that post, reporting by letter to the commanding general Department of Dakota.—Par. 24, *S. O. 82, Headquarters of the Army, A. G. O., Washington*, April 8, 1890.

By direction of the Secretary of War, the leave of absence granted ROBERT M. O'REILLY, *Major and Surgeon*, in S. O. 24, October 16, 1889, amended by S. O. 252, October 29, 1889, both from this office, is extended one month.—Par. 30, *S. O. 81, A. G. O.*, April 7, 1890.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING APRIL 12, 1890.

WHITE, S. S., *Assistant Surgeon.*—Detached from the "Minnesota," and wait orders.

HARRIS, H. N. T., *Assistant Surgeon.*—Ordered to the "Minnesota."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM MARCH 24 TO APRIL 5, 1890.

BAILHACHE, P. H., *Surgeon.*—To represent Marine-Hospital Service at the meeting of the California State Board of Health, April 4, 1890.

WYMAN, WALTER, *Surgeon.*—To proceed to Wilmington, Delaware, on special duty, March 27, 1890.

CARRINGTON, P. M., *Passed Assistant Surgeon.*—Granted leave of absence for thirty days, on account of sickness, March 28, 1890.

PETTUS, W. J., *Passed Assistant Surgeon.*—Promoted, and commissioned Passed Assistant Surgeon by the President, February 26, 1890. Granted leave of absence for sixty days, with permission to go abroad, April 2, 1890.

HEATH, F. C., *Assistant Surgeon.*—To rejoin station, Detroit, when relieved at Cleveland, April 3, 1890.

KINYOUN, J. J., *Assistant Surgeon.*—To proceed to Wilmington, Delaware, on special duty, March 28, 1890.

STONER, J. B., *Assistant Surgeon.*—Relieved from special duty on floating-hospital "Stevens"; ordered to assume command of the Service at Pittsburg, Pa., March 28 and April 4, 1890.

CONDICT, A. W., *Assistant Surgeon*—To proceed to Cleveland, Ohio, for temporary duty, April 2, 1890.

GUITERAS, G. M., *Assistant Surgeon.*—When relieved at Pittsburg, Pa., to proceed to Marine Hospital, New York City, for duty, April 3, 1890.

THE MEDICAL NEWS *will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.*

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS *should be addressed to No. 1004 Walnut Street, Philadelphia.*